

Francis Jewett.





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1873

CITY DOCUMENTS

OF THE

CITY OF LOWELL,

FOR THE YEAR 1873-74.



LOWELL, MASS.:

MARDEN & ROWELL, BOOK AND JOB PRINTERS, COURIER OFFICE.
1874.

EXTRACT FROM THE ORDINANCES OF LOWELL.

CHAPTER V.—CITY DOCUMENTS.

[Amended January 23, 1872.]

SECTION 1. The following City Documents shall be printed in pamphlet form of the size of the Annual Report of the School Committee, to wit: Mayor's Address; Auditor's Annual Report; Annual Report of the Directors of the City Library; Annual Report of the Superintendent of Burials; Annual Report of the Chief Engineer of the Fire Department, and Municipal Register.

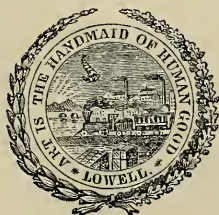
SECTION 2. All City Documents shall annually be bound together in one volume, under the direction of the City Clerk, a copy of which shall be deposited in the City Library; in the Middlesex Mechanics' Association in Lowell; and one copy shall be sent to each city of the Commonwealth, the Library of Harvard College, the Public Library of Boston, and the Smithsonian Institute at Washington.

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1. Inaugural Address of His Honor, FRANCIS JEWETT, Mayor of the City of Lowell, to the two branches of the City Council, January 5, 1874.
2. Municipal Register, containing Rules and Orders of the City Council, and a list of the Government and Officers of the City of Lowell for 1874.
3. Forty-eighth Annual Report of the School Committee of the City of Lowell, together with the Tenth Annual Report of the Superintendent of Public Schools, for 1873.
4. The Auditor's Thirty-Eighth Annual Report of the Receipts and Expenditures of the City of Lowell; together with the Treasurer's Account, for the Financial Year ending December 31, 1873.
5. Salaries of the Officers of the City of Lowell, for the year 1874-75.
6. Annual Report of the Directors of the City Library, for the year 1873.
7. Annual Report of the City Physician and Superintendent of Burials, for the year 1873.
8. Annual Report of the Chief Engineer of the Lowell Fire Department, for the year ending March 31, 1874.
9. First Annual Report of the Water Board of the City of Lowell, made January 1, 1874.
10. Report of the Engineer to the Committee on Sewers and Drains of the City of Lowell, on a General System of Sewerage, 1873.

THE
INAUGURAL ADDRESS
OF
HIS HONOR
FRANCIS JEWETT,
MAYOR OF THE CITY OF LOWELL,
TO THE
TWO BRANCHES OF THE CITY GOVERNMENT,

JANUARY 5, 1874.



LOWELL, MASS.:
MARDEN & ROWELL, BOOK AND JOB PRINTERS, COURIER OFFICE,
1874.

CITY OF LOWELL.

IN COMMON COUNCIL, January 5, 1874.

ORDERED, If the Board of Aldermen concur, That His Honor the Mayor, be requested to furnish a copy of his Address for publication.

In Common Council, January 5, 1874.

Read and adopted; sent up for concurrence.

GEO. GARDNER, *Clerk.*

In Board of Aldermen, January 5, 1874.

Read and adopted in concurrence.

SAMUEL A. MCPHETRES, *City Clerk.*

ADDRESS.

Gentlemen of the City Council:

We shall most appropriately begin the duties assigned us by our fellow citizens by invoking wisdom from the Great Ruler of the affairs of men, and by rendering to Him thanksgiving for the great prosperity which He has bestowed upon our city the past year. No pestilence has visited it; no general depression of business has seriously disturbed the rewards of industry. We begin another year with the productive capacity of our immense manufactories and extensive machine and workshops greatly enlarged; with the trade of our merchants increased in amount and profit; with a population greater by hundreds of families and thousands of souls; with new and beautiful dwellings covering our hitherto vacant lands; with large and magnificent blocks rising along the lines of our principal streets; with an accumulated wealth capable of easily yielding a

tax sufficient for our needs; and with indications of a permanent future growth in thrift and population promising to gratify our most ardent wishes.

The financial depression of the country has only lightly, and we trust, temporarily affected us, and will not seriously disturb our prosperity, or retard our growth. It has produced but a slight diminution of the price of labor, but even this loss we must remember falls heavily upon the poor man whose income was already strained to its utmost tension to meet his daily wants, and so we should the more earnestly hope that its effects are but transitory, and that the wail of poverty will not long sadden the joyous hum of busy industry.

As in my former address, so now again I invite you, my associates, bravely to grapple with the tasks of the year before us, with the clear consciousness that you are dealing with the affairs of a great and growing city, whose future expansion in all respects is a certainty, and cannot be disregarded in our plans and legislation. Let our influence, in all ways, and at all times, tend to promote such expansion and growth. Our territorial limits; our system of streets; our sewerage and drainage; our public buildings; our public parks and commons; our water supply; the suppression and punishment of

crime; the efficiency and vigor of our police; our cleanliness and sanitary regulations; our protection of life and property, by proper building regulations; to guard against the terrible calamities of fire; our means of extinguishing fires; our schools and means of education; all demand such action at our hands as will adapt them to a large, vigorous and growing city, with a population now numbering 50,000, and destined within the period of the active life of some here to be more than 75,000.

Wise municipal legislation, sound economy, judicious expenditures, are those which have reference not merely to present necessities, but also to future probabilities. It is far cheaper and better in the end to thoroughly do our work so that the wants of many years shall be fully met without change than to be obliged hereafter, constantly, at great expense and labor to undo and do over again that which was imperfectly done in the beginning. What is thoroughly done is permanently done. A niggardly economy now will certainly create a demand for an excessive outlay in the future. The demands of each year had better be fully and honestly met as it passes, rather than leave its deficits to be supplied by increasing the burden of another in the future. Let each year bear in full proportion its own burden. Let us

then feel and resolve that this shall be a year of work, thorough, honest, faithful work, in doing which we shall feel fully the weight of responsibility upon us and comprehend the wants of our city.

Allow me, in obedience to the requirements laid upon me as Mayor, to communicate to you some information and to recommend some measures which, in my judgment, may tend to the improvement of the finances, the police, health, security, cleanliness, comfort, education and adornment of our city.

SCHOOLS.

Our public schools first demand our attention. The rising generation will soon take upon itself the important and responsible duties of managing its individual and social interests; the interests of the city and of the state. The maintenance of our institutions, so various, intricate and powerful, whether religious, educational, political, financial or industrial, must soon devolve upon it. How these grand, delicate and important trusts are to be met depends upon the educational training furnished through our schools. Every civilized state has recognized the duty of educating the children. Our system of education is through the public school,

planted and upheld and managed by the state, open alike to all classes and sects, and supported by the equal taxation of every citizen; a system in which every citizen shares equally in the burdens and benefits. This system we fully believe is the best and noblest yet devised by man. It has not the exclusiveness of private, sectarian and caste schools. It recognizes the absolute equality before the law of every child, and the inalienable right of every child to a fair opportunity of education as due to him from the State. In this system our Commonwealth has entrusted to us, constituting as we do, for the time being, the municipal government of our city, the duty of feeding and sustaining our public schools. Let us so discharge this duty that we may exalt the public school and place it in the rank which it merits, viz.: that of being, in all respects, the fittest place in which to give an elementary education to every child, whether of native or foreign parentage. Let us so foster, cherish and encourage it, that by its free and untrammelled operation it may vindicate its claim to the respect and hearty support of every citizen of whatever faith, class or nationality. It is for this purpose and to this end that I again most heartily and earnestly recommend that your school appropriations be as generous as true wisdom and econom

allow; and by so doing I once more call upon you to vindicate the grand superiority of the free public school over all other systems of education for the mass of our children. In its perfection lies the purity of the ballot and the perpetuity of free institutions.

The age recognized by our laws as the proper one for the education of children in our public schools is from five to fifteen. Between these ages the law requires every child to attend school to a considerable extent each year. If there is a failure to attend, punishment may be inflicted upon the negligent and guilty party, whether parent or child. Our manufacturing establishments are forbidden to employ children who have not attended school for the requisite time.

By virtue of a law recently placed upon our statute books, we now employ constantly two officers termed truant commissioners, to enforce obedience to these wise laws on the part of children, parents, and manufacturing corporations. These officers are subject to the appointment and control of the school committee, and no longer belong to our regular police force. We trust they may be found useful and efficient in enforcing compliance with our wise legislation to prevent the prevalence or continuance of ignorance which so disqualifies for all the duties of citizenship,

and is such a fruitful source of crime. In our schools in May last we had 6728 scholars, distributed by wards as follows: In Ward One, 626; Ward Two, 823; Ward Three, 1533; Ward Four, 1590; Ward Five, 1517; and in Ward Six, 639; being an increase of 429 over 1872.

We have now one High, nine Grammar, and fifty-four Primary schools.

EVENING SCHOOLS.

In addition to the day schools, the school committee have established and maintained for several years evening schools at a considerable outlay. These schools, under the law are permissive and not obligatory. They were originally intended to accommodate a class whose age and the necessity of daily labor rendered it impossible or exceedingly inconvenient for them to attend the day school. So long as they tend to accomplish their original purpose, they are useful; if, however, they come to be patronized, solely or mainly, by those who ought to be found in the day school, and who could be much better educated there, then the propriety of their continuance may be questionable. Five of these schools are now in operation, with an attendance considerably larger

than that of former years, employing fifty-six teachers; an excess of fifteen over last year.

DRAWING SCHOOLS.

Another class of schools established by the school committee, now required by law, and maintained by our annual appropriations, are the free drawing schools. A law requiring the establishment of these schools in cities whose population exceeds 10,000 was enacted in 1871. These schools were first established in this city in the winter of 1872-3. They are now being held in our city four evenings in each week, in the Green grammar school house, and embrace six different classes. They are free and open for the attendance of any person over fifteen years of age. The pupils in these classes number about two hundred and fifty, under the charge of two principal and nine assistant teachers. These classes are composed of the teachers in our public day schools, overseers and operatives in our mills, mechanics, carpenters, masons, machinists, architects and young men fitting themselves for mechanical employments. They are accomplishing a great and good work, and needed appropriations should be freely made.

The entire cost of the evening and drawing schools now in operation will not be far from \$7000. The entire appropriation for schools was \$144,520.64; the expenditure, \$133,440.96; leaving a balance of \$11,079.96.

SCHOOL HOUSES.

During the last year a new school house has been completed upon Worthen Street, at a cost of \$26,236.81, and now accommodates four primary schools, which have been transferred to it from other school houses. This left vacant the school house on Tilden Street, which has been sold for \$3450; also the school house which formerly stood on Worthen Street, near Mr. Kitson's shop, which has been removed to Carter Street, near the Bleachery, where it has been fitted up, and it will at once be filled with scholars residing in that vicinity who were needing accommodations. The cost of removal and fitting up was \$635. The primary school house on High Street was completed in February at an entire cost of \$11,663.44, and is now occupied by two primary schools and one of the evening schools. The Elliot Street school house has been rearranged and refitted in accordance with the recommendations of last year, at a cost of \$1500.

More accommodations for children living on the Boott and Massachusetts Corporations and thereabouts are needed, which may render necessary the erection of a building upon the lot purchased upon Kirk Street. In my address of last year I called the attention of the City Council to the necessity of making provision for the procuring of a suitable lot for a large and commodious grammar school house, to accommodate the large and increasing population of Ward Four. The tide of population has set largely in that direction; and the necessity of such a school house cannot be much longer overlooked. I recommend the selection and purchase of a suitable lot for such a building. The appropriation for school houses was \$43,949.48, and the expenditure \$42,661.51, leaving a balance of \$688.47.

PUBLIC BUILDINGS.

The attention of the City Council has from time to time been called to the need of better accommodations for our Police Court, and during the past year the question has been discussed whether the present Market House building could not be remodeled, by extending it on the southerly side, and reconstructing it for a city government building, with every office, including a Police Court, all under one roof.

Upon somewhat mature deliberation, it was feared by some that the cost of the alterations would amount to almost as much as the cost of an entire new city hall. I can see no reason to alter an opinion heretofore expressed, when in the Board of Aldermen, that the most feasible way of obtaining a suitable police court room, is to place another roof on the Market house building, which will accommodate the several armories, and also give the much desired court-room with suitable ante-rooms.

In connection herewith I invite your attention to the actual need of more room for the proper transaction of business at the City Government Building. The increase in all departments has far outgrown the limited space allotted for some of the offices. I think the time has not yet arrived for incurring the large expense of a new city hall, even if the city had an eligible piece of land, but I am of the opinion that an expenditure of fifteen or twenty thousand dollars, will so far improve the present building, as to make it adequate to our wants for the next ten years. By putting modern windows in the two upper stories, and a mansard roof in place of the present one, the outside appearance of the building will be greatly improved, and will correspond somewhat with the many changes in the old-fashioned buildings on Mer-

rimack street. In the upper story thus created, the Board of Aldermen and the Common Council could have large and commodious rooms, with proper committee rooms adjacent, and on occasions like the present the wants of the public would be met. The water-board could then occupy a portion of the rooms now used as Aldermen and Council rooms, and the offices of the City Clerk, City Treasurer, City Auditor and Civil Engineer be enlarged. The engineer for the water department must now have his head-quarters at this building, and it seems a proper place for the other offices of the water department. The city now pay the Merchants Bank a sum equal to the interest of about \$8000 for rent of the rooms occupied by the water board. This amount would be saved, and the public who have occasion to transact business at the City Government building could be better served by having all the offices under one roof. I offer these suggestions believing it better economy than to incur the large expenditures necessary for a new city hall, as some of our sister cities have done. With these suggestions, I leave the whole matter for your consideration and action. No considerable expenditure for public buildings other than for school houses has been made the past year. The appropriation for lighting streets and public buildings was

\$21,806.54, the expenditures, \$18,350.92, leaving a balance of \$3,455.62. For repairs of public buildings there was appropriated \$7,935.39, of which \$5,325.55 has been expended, leaving a balance of \$2,609.84.

Through the action of the City Council last year, petitions for a new Post Office were prepared and forwarded to Washington in the charge of the representative in Congress from this district. In an interview with our present representative I was assured by him that proper efforts would be made to secure such an appropriation for the purpose as was proper, and he thought it would be attended with success. You will judge whether any and what further action on your part is needed.

LIBRARY.

I reiterate the statements in my address of last year in regard to the value of our free City Library, and commend it to your generous appropriation and fostering care.

During the year there have been added 508 new volumes, making the whole number of volumes now in the library 16,548. The whole amount of the appropriations from all sources, including the dog tax

of \$2,142.86, is \$5,773.50; the expenditures \$5,246.10; leaving a balance of \$527.40. The amount expended for new books was \$681.31. The expenditure was increased by the preparing and printing of a new catalogue, at an expense of \$1,472.60, which curtailed the purchase of new volumes. These catalogues will be sold during the coming years, and their cost thereby be substantially returned to the credit of the library. I learn from the report of the directors of the library that the number of readers the past year is 5500 more than in 1872, and that, also, there is a growing demand for books of a higher and better quality. These facts are encouraging, and indicate an improved taste among our people, and vindicate the wisdom of the establishment and maintenance of the institution. A free public library filled with well selected books, must, in the course of years, tend largely to educate the people and raise the standard of taste. The faithfulness and devotion of the librarian, and the character of the management of the library by its officers and directors, may be tested by the fact that 20,000 more volumes were taken from the library for reading this last year than during the year when the present librarian first entered upon his duties.

STREETS AND BRIDGES.

I again call the earnest attention of the City Council to the condition and wants of our streets. Aside from our schools no more advantageous expenditure can be made than a proper outlay for the improvement of our public streets. Such an expense as will put a street that is much travelled in a permanent state of repair, though large at first, is far better economy than constant small outlays which only temporarily improve its condition. Well constructed streets attract travel, increase the population along their lines, protect the city from the payment of damages for accidents to the persons and property of travellers, beautify and adorn the city, facilitate the requirements of trade and manufactures, draw in the inhabitants from the surrounding country, increase the taxable value of property, and in a thousand ways directly and indirectly promote the welfare, growth and prosperity of the city. All those portions of our main streets which are centrally located ought to be paved with some suitable material, as fast as a judicious expenditure will allow. The expenditures of the past year, though apparently large, have, I believe, been judiciously applied, and have extensively improved our streets. The northerly

half of East Merrimack street, from Concord river to Fayette street, Dutton street from just above Market street to a point near Fletcher street, and portions of Middlesex and Merrimack streets have been paved with small granite blocks, amounting in the whole to 7,787 square yards of pavement. 1,312 square yards of wooden paving has been laid on Central Bridge, and 5,522½ square yards of concrete paving on Pawtucket street; 18,932 feet, or nearly four miles, of edgestone, 63 feet of corner-stone, 10,833 square yards of concrete sidewalk, 1,288 square yards of concrete street crossings, and 2,237 square yards of concrete gutter paving have been laid in streets in different parts of the city. Appleton street has been extended; the lines of Thorndike street have been changed and straightened; Grove, Second, Eighth, Hampshire, Watson, Richardson, Jewett, Dover, part of Marshall and Gates, Forest, Tremont, West Fourth and Thirteenth streets have been laid out, accepted and improved.

I recommend this year the paving with small granite blocks, Gorham Street from Middlesex to Charles Street; and Merrimack Street from Worthen Street to Suffolk Canal, with small granite blocks; Dutton Street from Merrimack to Market Street, with wooden pavement; and Bridge Street from Central

Bridge to Sixth Street, with either small granite blocks or wooden pavement.

The appropriation charged to the account of Streets and Bridges with the undrawn balance of 1872, was \$171,895.54, and the expenditure was \$144,257.05, leaving an unexpended balance of \$27,638.49. But there should be deducted from this amount the amounts for fuel, labor, &c., which were furnished to other appropriations, and finally charged to them, of \$26,254.66, and the expenditure for the extension of Appleton Street, of \$28,309.33, and there will be left as the actual expenditure for the ordinary purposes of streets and bridges, \$89,693.06. There is, moreover, a large amount due for sidewalks which have been laid, and there is on hand a large amount of coal, wood and stores, all of which are to be allowed to the credit of this appropriation.

SEWERS AND DRAINAGE.

The introduction of water has made prominent the necessity of a system of sewerage, which shall be sufficiently thorough and ample for all parts of the city and for all future time. The location of Lowell at the junction of two considerable rivers, with the surface of the land inclining generally more or less towards the beds of those rivers, indicates at once the

propriety and feasibility of draining her whole territory into those rivers, especially as their respective currents are more or less active, rendering them capable of carrying permanently away all sewerage matter. Accordingly in 1871 the attention of the City Council was called to the matter in the inaugural address of Mayor Sherman, and again in 1872 by Mayor Peabody. In pursuance of these recommendations in 1872, an engineer, David W. Cunningham, esq., was employed to devise and initiate a proper system of sewerage for Lowell. He and his assistants have pursued their work until the present time, and have devised and commenced the construction of a system of sewerage which we believe, if fully completed, will provide amply for our city for all future time. It divides the city into several districts, each of which is ultimately to be drained by suitable tributaries through a main sewer into either the Concord or Merrimack river.

After making proper surveys, excavations, measurements, and investigations, a series of maps or plans have been prepared with great care, which are to be bound together with a suitable index, so as to be of convenient use and easy reference, and which will show the several sewerage districts of the city, the constructed and contemplated sewers, with all partic-

ulars relating to each sewer, including its exact location in the street, its depth, its size and capacity, its inclination, its outlet; also the date of its construction, the amount of the assessment of each abutter, whether paid or unpaid; distinguishing the old sewers from the new, and those constructed from those contemplated. By proper coloring and lettering, all these particulars of every sewer can be seen by any one at a glance upon the maps. The immense value of these maps to the city cannot be over estimated; and I ask the careful attention of the City Council to this system of sewerage, and to these plans, maps, and drawings. The work has so far progressed that all the engineering and surveying is done, all profiles are finished, and only some two or three months' work remains to be completed upon the plans.

The whole estimated cost of sewers contemplated by this scheme in accepted streets is \$831,419.00; the cost of those constructed in 1872 and 1873 is \$77,620.00, or about one twelfth part of the whole. The aggregate length of sewers already constructed, including the ones which will be used in the new system, is 13.4 miles; and of those to be constructed 37.9 miles; making the total aggregate length when completed of 51.3 miles.

In pursuing the system contemplated, of course the main and outlet sewers must be first constructed. Accordingly, in 1872, sewers were built in Taylor, Wamesit, South and Oak streets, at an aggregate cost of \$4,436.49, and in 1873, in Suffolk and Moody, Gorham and Central, Central, Lawrence, East Merrimack, Dutton, Grove and School, Howard, Highland, Thordike, First and Read, West Sixth, Hampshire, Pearl and Bow streets, at an aggregate cost of \$73,276.00.

The cost of engineering upon the new system is as follows: In 1872, \$5,352; in 1873, \$6,799; estimated cost to complete the plans, \$1000; making the entire cost of the engineering and completion of maps and drawings as contemplated, \$13,151.

The engineer recommends the construction in 1874 of the following sewers, with the estimated cost of each: The Suffolk street main brick sewer from the intersection of Race and Moody streets to the outlet in Merrimack river, 2336 feet at a cost of \$43,237.00; Suffolk street, from Cross street to Broadway, 270 feet at a cost of \$5,592.00; Broadway, from School street to Suffolk street, 2370 feet, cost \$10,786 00; Cabot street, from Salem street to Moody street, 475 feet, cost \$3,482.00; Salem street, from Cabot street to Pawtucket street, 1715 feet, cost \$11,930.00; Pawtucket street, from School street to Salem

street, 1369 feet, cost \$10,529.00; Merrimack street, from Pawtucket street to Cabot street, 1550 feet, cost \$7,700.00; Merrimack street, from City Hall to Prescott street, 1112 feet, cost \$11,357.00; Prescott street, from Merrimack street to the outlet sewer, 260 feet, cost \$1,842.00; Gorham street, from Appleton street to Summer street, 400 feet, cost \$2,052.00; Davidson and Wall streets, west side, 383 feet, cost \$1,056.00; Davidson and Wall streets, east side, 500 feet, cost \$1,750.00; East Merrimack street, from Fayette street to Concord river, 738 feet, cost \$3,934.00; Fayette street, between East Merrimack and Everett streets, 824 feet, cost \$2,773.00. I call your attention to these recommendations of the engineer for 1874, and leave them to your decision as to the extent they shall be carried out. The outlets at the Suffolk street and Prescott street sewers, as recommended, should especially be provided for in your appropriation.

The appropriation for sewers and drains in 1873 was \$81,437.95; the expenditure, \$65,575.66, leaving a balance of \$15,862.29.

FIRE DEPARTMENT.

The Fire Department consists of one Chief Engineer, with five assistant Engineers, three steamer companies of thirteen men each; five hose companies with twelve men each; and one Hook and Ladder company of twenty-nine men, in all one hundred and thirty-four men, being an increase of ten men during the past year, caused by a new hose company having been appointed, and located in Centralville. For apparatus we have four steamers, three of them being in service, ten hose carriages, eight of them being in service, two hook and ladder trucks in charge of one company. Also eight hose reels on runners, seven of which have been recently added, and are now giving evidence of their usefulness during the winter season. The new system of water pipes and hydrants connected with them have responded fully to all the tests to which they have been subjected by the department during the past year, thereby giving us assurance that we have an abundant supply of water for the hour of need. In making extensions of water pipe, hydrants are put in at all suitable points, being usually located about three hundred feet apart. Sixty have thus been added the past year.

There have been during the year fifty-six alarms—a considerable number of them for slight causes. The loss from fires, as near as can be ascertained, was \$60,190, upon which the insurance was \$57,768; loss above insurance, \$2,422. The Fire Alarm Telegraph still continues to answer expectations, and has during the past year been put to additional uses, being now used on extremely stormy days to notify teachers that there is to be but one session of the schools. The location of more signal boxes and bell strikers is suggested for your consideration.

I desire to bear testimony to the great promptness and efficiency of the fire department for the past year. To these qualities we are indebted for the general protection from the terrible ravages of fire which we have experienced. The amount appropriated was \$41,513.47. The amount expended was \$37,309.91. Balance unexpended, \$4,203.56.

PAUPERS.

A generous provision for the poor is not a charity, but a duty. They are of us and even among us. Among them are found those once prosperous, the intelligent, and even the refined. None are exempt from the calamities of sudden changes of fortune,

long-continued sickness and inability to work, and other misfortunes, to which men are ever subject and by which so many are constantly swept into the almshouse. Tenderness, humanity, and generosity should ever characterize our provision for, and our treatment of, the poor.

The management of our almshouse for the past year, as heretofore, under its present superintendent and officers, we believe has been wise and judicious, and the inmates have been tenderly and kindly treated. No complaint of severity, harshness, or unkindness has come to my knowledge. The inmates have been well cared for and made comfortable, and the farm has been well managed.

The number of inmates January 1st, 1873, was 48; the number received during the year, 71; the whole number for the year, 119; the number discharged, 57; leaving the number December 31st, 1873, 62. The number of deaths was 8, and the number of the insane, 17.

The cash received from the sales from the farm during the year, \$2,609.32. The value of the produce harvested, exclusive of that used by the family before harvesting, \$4,989.92. This exceeds the value of the crop for 1872 by \$528.77. The present value of the real estate is estimated at \$25,000.00, and of

the personal property \$14,462.95; making a total valuation of \$39,462.95.

The appropriation for the past year was \$27,805.24, and the expenditure \$23,069.60, leaving a balance of \$4,735.64. I recommend a generous appropriation for the coming year, and such oversight and attention as shall leave no pauper destitute of proper comforts. Our object should not be to reduce the expenditure on behalf of the poor to the smallest possible amount, but to make certain that it is sufficiently large, and so appropriately applied, as to insure the absolute comfort, so far as is possible, of every unfortunate occupant of the almshouse.

WORK HOUSE.

Connected with the almshouse is a workhouse for the reception of adults convicted of a certain class of offences which indicate that they are weak rather than criminal or vicious. Here they escape the contact and contagion of the hardened criminal and extremely vicious, to which they might be subjected in other penal institutions. They are employed in some proper and healthy work, and enabled in some measure to pay for their support. We believe this institution is an eminently proper receptacle of a

certain class of adult offenders, and if properly managed, may serve to strengthen and reform many inmates. The number committed during the year is 73; whole number during the year, 88; discharged, 76; number remaining Dec. 31st, 1873, 12.

REFORM SCHOOL FOR JUVENILE OFFENDERS.

This eminently useful institution, connected with the almshouse, is still under the charge of Lorenzo Phelps as superintendent, and Wm. A. Lang as teacher and chaplain. As the workhouse receives the adults, so this institution receives the children convicted of offences not in their nature criminal. Here they are kept properly employed with healthy work, and a suitable amount of study in school. This I believe to be one of the best institutions in the state for its purposes, and should be well cared for and regulated by us.

The number of inmates, January 1, 1873, 41; number admitted during the year, 53; whole number for the year, 94; number discharged, 52; number remaining January 1, 1874, 42. Of the number remaining, 32 belong in Lowell, 4 in Charlestown, 4 in Chelsea, and 2 in Woburn. In addition to these towns, Winchester, Lexington, and Somerville, by an

arrangement with the city, have the right to commit boys to this institution. I am informed that no boy has absconded during the year; an event which has never before happened since the organization of the school, and which testifies to the kind treatment, comfort and contentment of the boys.

OUTSIDE RELIEF.

The amount of relief furnished to the poor outside of the almshouse is \$2,167.30, of which sum \$841 was furnished to persons having a settlement in Lowell, and \$1,326.30 to those having no settlement here. Wood and coal to the amount of \$640, and provisions and groceries to the amount of \$201, have been furnished to families having a settlement here; and \$613.50 worth of fuel, and \$402.80 worth of provisions and groceries have been furnished to those having no settlement.

A judicious and careful distribution of outside relief to the poor, is not only a duty to be discharged, but often wise economy. The unfortunate, who are willing to help themselves, should not unnecessarily, or too quickly be hurried into the almshouse.

W A T E R .

The grand achievement of introducing a supply of pure water into our city may now be regarded as accomplished. The conduit, the tunnel, and the gallery, have the past year been thoroughly examined; the capacity and strength of the pump and engine connected with it have been subjected to a final and satisfactory test; an additional distributing main has been laid from Centralville to Belvidere, across Merrimack river just above Hunt's Falls, and in every respect the city is now thoroughly and completely provided with an abundant supply of water for domestic purposes, creation of power by steam and the extinguishment of fires. The work has been a protracted and expensive one, but it is fully believed that advantages secured amply repay for all the delay and cost. These advantages are apparently well appreciated by our citizens. A little more than one year ago, service pipes for the use of families began to be laid, and up to December 1st I am informed there were rising of four thousand two hundred takers of water, most of whom are families, in addition to what is taken by the city for fountains and fires; yielding now to the city an income of about \$50,000 per annum. This number of takers, in so short a period after its

introduction, far exceeds the most sanguine predictions. There is every prospect that it will continue to increase until its use shall be well nigh universal among our citizens and shall yield an income which will pay the full interest on the investment. But we must not look to the probable annual income alone for our repayment for the outlay in the introduction of water. We derive an additional and we may say far greater profit from the increase of comfort, convenience, security to property, cleanliness, health, industry and the enhanced value of real estate; and from many other results flowing directly and indirectly from this achievement. While it increases our taxes and burdens, it at the same time in a two-fold ratio increases our ability to bear them.

During the last year there has been expended \$349,717.87, to be added to the construction account of the water works, making the whole amount expended for the introduction of water, up to the present time, \$1,629,634.93. Deduct from this amount the sums credited to it from various sources of \$87,004.05, and we have left \$1,542,630.88 as the net cost of the water to Jan. 1, 1874. In consequence of the unfavorable condition of the market and scarcity of money, our water loan bonds could not be sold, except at too great a sacrifice. It was therefore thought

better to retain them for a more active market, and borrow the needed money for the completion of the work, and accordingly \$100,000 was borrowed from the Lowell Institution for Savings. There now remains on hand some more than \$70,000 worth of unsold bonds. Of the \$349,717.87 expended the past year, the appropriation being only \$244,333.59, there has been taken from other appropriations \$117,630.-38 and applied to the water construction account, which amount it will be necessary at once to obtain by borrowing or otherwise, so as to restore it to the several appropriations from which it has been taken.

POLICE.

The regular police force now consists of twelve day policemen, including the marshal and his deputy, and the court officers and thirty night watchmen, including the captain of the watch and the two keepers of the station, and five specials for Sunday work. There have been 2,492 lodgers in the station house, 2279 males and 213 females, of whom 2157 were foreigners and 335 Americans, and 186 were minors, and 2,352 were non-residents. There have been 2872 arrests for crime, of which 2,454 were males, 518 females, 2,445 foreigners, and 427 Americans.

The prosecutions before the Police Court number 1,302. Of the arrests 2,026, or 71 per cent., were for drunkenness in some of its forms; 198 for assault and battery, and 125 for larceny.

Although the State maintains a corps of officers here, who make a specialty of prosecuting a certain class of offenses, yet this does not relieve our local police force from the duty of lending the State officers in their work all needed aid and support, of working in harmony with them, and of informing of and causing to be prosecuted either by themselves or the state officers all offences and violations of all criminal laws alike. Chapter 261 of the Acts of 1866 expressly enjoins these duties upon all police officers. Efficiency, obedience to law and police regulations, and supreme faithfulness in the discharge of every duty should be carefully exacted of every police officer. The City Council has increased the pay of police officers from \$2.50 to \$2.75 per day. Under the law as it now stands, police officers are not annually appointed, but when once appointed, hold office during the pleasure of the Mayor and Aldermen. Practically this makes each policeman a permanent officer. Under this tenure of office, and with the compensation as now fixed, we ought to secure competent and reliable officers. Citizens whose prop-

erty and lives demand protection, as well as the city government, have a right to require and will require of every officer sobriety, faithfulness, and that at all proper times he shall be found at the post of duty on his beat and shall not frequent, visit or countenance places where violations of law are practised or allowed.

We are happy to bear testimony to much efficiency and a large degree of faithfulness and devotion to duty in the police force the past year.

The appropriation for this department was \$52,602.36 ; the expenditures, \$45,072.50 ; leaving a balance of \$7529.86.

PUBLIC HEALTH.

The wisest sanitary measures are those which seek to prevent the introduction of pestilence and sickness. It is believed that in this view our supply of water now introduced, together with the contemplated thorough system of sewerage, will prove important agencies in preserving the health of the city. In addition to these means of warding off contagion all surface rubbish and filth, which when neglected accumulates in the streets, passage and alley ways and back yards, should be daily looked

after and removed. If contagious disease manifests itself immediate suppression by isolation should be the rule when possible.

Carrying out these views during the past year the Board of Health early in the season employed two men, who with a horse and cart worked daily until late in the autumn, removing from all parts of the city all surface garbage and offensive matters. All places in the thickly settled parts of the city were frequently visited by members of the Board, or their agents, and great pains were taken that no offensive or filthy matters should be allowed to remain or accumulate. Small pox in two or three instances manifested itself, and in every case the patient was at once removed to the pest house and put under proper care and treatment. It is believed that by pursuing these prompt measures, sickness has been prevented. I earnestly recommend the adoption of similar or more stringent sanitary measures the coming year.

The Board of Health is annually chosen from the members of the city government. It ought to have an organization, and an office in the city government building, where it could be found by all persons when communications are to be made, so that its work may be efficiently performed. The changes

in the present City Hall, already suggested, would afford this accommodation.

The sanitary condition of our city has been greatly promoted by the public bathing facilities afforded the past season. It is estimated that at least 30,000 bathers have availed themselves of the advantages afforded them, evincing the great demand for better accommodations. I would recommend to your favorable consideration and early action the subject matter of report referred to you by the last city government, that necessary appropriations of money be made for carrying the same into effect.

The appropriation to the health account was \$5167.34; the expenditures \$2160.81; balance unexpended \$3006.53.

COMMONS AND PARKS.

As the population of our city becomes more dense, the value of our few commons and parks will be more and more felt. They should accordingly receive due attention and be put and kept in a proper condition. They should possess such cleanliness and neatness and ornamentation as to make them pleasant and popular places of resort and recreation. So far as possible they should not be used for circuses or

other public shows, which deface them or tend to render them unclean.

During the past year, concrete walks have been laid and trees have been set out on the South Common. The pool of water, which was formerly stagnant, and more or less filthy, has been drawn off and cleansed. The bottom has been covered with clean gravel, and paved with good stone paving, and its sides have been enclosed with a good wall of stone and cement, and clean city water admitted.

The park in Centralville near the corner of Third and Durant streets has been levelled, graded, covered with green turf and surrounded with suitable granite edge stones, and a well laid concrete walk, and will I believe be found to add much to the attractiveness of that section of the city.

The appropriation for commons was \$9004.77, the expenditures \$6914.75, leaving a balance of \$2090.02.

FINANCE.

In addition to the several appropriations and expenditures already alluded to under the various headings, there was \$3,416.08 appropriated for printing and advertising, of which \$3,012.30 has been

expended, leaving a balance of \$403.78; for salaries there was appropriated \$19,734.22, and \$18,247.91 expended, leaving a balance of \$1,486.31; for city debt there was \$25,114.10 appropriated, \$15,124.63 expended, leaving a balance of \$9,989.47; for interest on city debt there was appropriated \$36,643.09, expended, \$31,702.39, leaving a balance of \$4,940.70. The reserved fund amounted to \$16,316.77, of which \$16,098.21 has been expended, leaving a balance of \$218.56.

FINANCIAL STATEMENT.

The whole amount of expenditures for the year ending Dec.

31, 1873, was - - - - - \$1,286,334 29

The whole amount of receipts was - - - - - 1,251,504 35

The balance in the treasury January 1, 1873, was - - - \$159,301 71

The whole amount received into the treasury in 1873, was - 1,251,504 35

Making a total of - - - - - \$1,410,806 06

The amount actually paid from the treasury, for all purposes

for the year ending Dec. 31, 1873, was - - - 1,275,833 21

Leaving a balance of - - - - - 134,972 85

There remains the amount of the unpaid draft of Dec.,

1873, amounting to - - - - - 50,443 37

Making the actual balance in the treasury Jan. 1, 1874, - \$84,529 48

The amount of the city debt Dec. 31, 1872, was - - - \$1,707,624 63

There has been paid during the past year on
note, to trustees of Thomas Nesmith,
which became due July 13, 1873 - - - \$4,624 63

There has also been paid during the past year
on installment note, to the City Institu-
tion for Savings, which became due
Nov. 1, 1873, - - - - - 10,500 00

15,124 63

\$1,692,500 00

There has been negotiated during the year with the Lowell
Institution for Savings, a loan of \$100,000 00, on ac-
count of water works - - - - - 100,000 00

There has been negotiated during the year with the same
Institution a loan of \$30,000 00 for roads and bridges,
on account of the extension of Appleton Street - - - 30,000 00

There has been sold during the year \$115,000 00 of the
Lowell Water Loan Bonds - - - - - 115,000 00

Total amount of the city debt, Dec. 31, 1873, is - - - \$1,937,500 00

Of the above amount \$512,500 00 belongs to the ordinary
city debt - - - - - \$512,500 00

There has been sold of water loan bonds, the amount of
\$1,125,000 00 and negotiated on notes of the city for
the construction of the water works \$300,000 00,
making a total amount of city debt on account of the
water works, of - - - - - \$1,425,000 00

\$1,937,500 00

There becomes due August, 1874, to the Boston Five Cents

Savings Bank - - - - - \$100,000 00

There has been \$25,000 00 appropriated and assessed in 1873, as a
nucleus for a sinking fund, created under an act of the Legislature, to be
applied only for the reduction of the water loan debt, which amount has
been invested by the committee on finance in safe securities for that pur-
pose. I recommend the appropriation of the same amount for the same
purpose this year.

CONCLUSION.

Gentlemen:—I have thus made such statements and suggestions, and recommendations as seem to me of most importance. There are many other subjects to which your attention will be called, which must necessarily be overlooked or omitted in this address. I shall not fail hereafter at proper times to bring before you matters of importance as they arise, with such suggestions as I deem proper. You must, however, remember that you are not confined to my suggestions and recommendations; we are all individually responsible for what is done or omitted. Legislation may be initiated by any member of the City Council. I desire the largest freedom in the discussion and introduction of measures. In this freedom our safety and strength lies. Let no measure be adopted because recommended by me, but let each measure stand or fall on its own merits. You will see from the foregoing financial exhibit, that we have an aggregate debt of no mean proportions. This we should meet manfully, know its exact amount and nature, understand what we have received for it, and place it just as it is before the people, without evasion or concealment, that they may annually regulate their actions and elections in view of it. Our policy

should, in my view, be cancellation, and no unnecessary entailment upon the future. Adopting this policy we should not shrink from proper annual taxation. It is unwise, it is useless, to lessen it one year only to increase it the next. Such a course would prove us unworthy of our trust. At the same time the magnitude of this debt should cause us to exercise the most rigid and unsparing economy. Schools, paupers, and to some extent, streets and sewers, cannot suffer for want of sufficient appropriations, but wherever we can it is our duty to economize and lighten the burden of taxation as much as the welfare of the city will allow.

The work for the City Council to perform is annually increasing. Your services are gratuitous and voluntary; nevertheless, as you have accepted the responsibility, duty calls you to a faithful performance of all the work required. We can discharge no higher duty than the faithful execution of the trust imposed upon us. The good citizen will not improperly seek the post, and especially will not shrink from it when called to it by the free choice of his fellow citizens.

Let every one, the current year especially, cultivate courtesy, urbanity and harmony of action. Without this we not only present a discreditable

spectacle, but we fail to accomplish any good. Individual preferences must be subordinated to the general good. Our city, under the favor of Divine Providence, has an honorable future before it. Let us fully realize this fact and speed it onward to its exalted destiny.

I shall rely confidently upon your hearty co-operation and support. As I trust I have in the past, as a member of both branches of the City Council and as Mayor, so the coming year, in all my actions, I mean to know only the good of the city. All the ability and devotion to duty which I possess shall be freely given to the performance of the task allotted me, and with your assistance, which I feel will be cordially rendered, I trust we shall hereafter ever recur, not only with no regret, but with a proper pride, to a year's work well done.

MUNICIPAL REGISTER:

CONTAINING

RULES AND ORDERS

OF THE

CITY COUNCIL,

AND A

LIST OF THE GOVERNMENT AND OFFICERS

OF THE CITY OF LOWELL, FOR

1874.



LOWELL, MASS:

STONE, HUSE & CO., BOOK AND JOB PRINTERS, 21 CENTRAL STREET.

1874.



JOINT RULES AND ORDERS OF THE CITY COUNCIL.

1. At the first or second meeting of the City Council, the following Joint Standing Committees shall be appointed, viz:

A COMMITTEE ON ACCOUNTS,
A COMMITTEE ON CLAIMS,
A COMMITTEE ON COMMONS,
A COMMITTEE ON FINANCE,
A COMMITTEE ON FIRE DEPARTMENT,
A COMMITTEE ON LANDS AND BUILDINGS,
A COMMITTEE ON MILITARY AFFAIRS,
A COMMITTEE ON PRINTING,
A COMMITTEE ON PUBLIC INSTRUCTION,
A COMMITTEE ON SEWERS AND DRAINS,
A COMMITTEE ON STREETS.

And the members of the Board of Aldermen, and of the Common Council, who shall constitute the Joint Standing Committees, shall be chosen or appointed by their respective Boards. Each of said Committees shall consist of two Aldermen and three members of the Common Council, except the Committee on Military Affairs, which shall be composed of the Mayor, two Aldermen and six members of the Common Council—one from each ward—and the Committee on Streets, which shall be composed of the Mayor, two Aldermen and five members of the Common Council.

2. All by-laws passed by the City Council shall be termed Ordinances; and the enacting style, which shall be but once recited in each Ordinance, shall be "Be it ordained by the City Council of the City of Lowell, as follows."

3. In all votes in which either or both branches of the City Council express anything by way of *command*, the form of expression shall be "Ordered" (except only in the case of Ordinances);

and whenever either branch or both branches express *opinions, principles, facts or purposes*, the form of expression shall be "Resolved." Provided, however, that the appropriation of money to any amount exceeding fifty dollars shall be by Resolution.

4. Each Board shall transmit to the other all papers on which any Ordinance, Joint Resolution or Order shall be founded; and all papers on their passage between the two Boards, shall be under the signature of their respective Clerks, except Ordinances and Joint Resolutions in their last stage, which shall be signed by the presiding officers.

5. The titles to all Ordinances and Joint Resolutions shall be prefixed upon their introduction.

6. Every Ordinance shall have as many readings in each Board as the rules of such Board require, after which the question shall be on passing the same to be enrolled; and when the same shall have passed to be enrolled, it shall be sent to the other Board for concurrence; and when such ordinance shall have so passed to be enrolled by each Board, the same shall be enrolled by the Clerk of the Common Council, and examined by a Committee of that Board; and, on being found by said Committee to be correctly enrolled, the same shall be reported to the Common Council, when the question shall be on passing the same to be ordained; and when said Ordinance shall have so passed to be ordained, it shall be signed by the President of the Common Council, and sent to the other Board, when a like examination shall be made by a Committee of that Board; and if found correctly enrolled, the same shall be reported to the Board, and the question shall be on passing the same to be ordained; and when the same shall have passed to be ordained, it shall be signed by the Mayor.

7. Every Joint Resolution shall have as many readings in each Board as the rules of such Board require; after which the question shall be on passing the same; and when the same shall have passed, it shall be sent to the other Board for concurrence; and when such Resolution shall have so passed in each Board, the same shall be enrolled by the Clerk of the Common Council, and examined by a Committee of that Board; and on being found by said Committee to be correctly enrolled, without further reading or question, shall be signed by the President of the Common Council, and sent to the other Board, when a like examination shall be made by a Committee, and if found to be correctly enrolled, shall be signed by the Mayor.

8. All enrolled Ordinances shall be written in a fair and compact hand, without interlineations; and no enrolled Ordinance or Resolution shall be amended.

9. When either Board shall not concur with the other in any Ordinance or Resolution sent from such other, notice of such non-concurrence shall be given by written message.

10. In every case of disagreement in any matter requiring the joint action of the two Boards, if either Board shall request a conference, and appoint a Committee of Conference, and the other Board shall also appoint a Committee to confer, such Committee shall meet at a time agreed upon by the Chairman, and state to each other, either verbally or in writing, as either shall choose, the reasons of the respective Boards for or against the proposed action, confer freely thereon, and report to their respective branches.

11. All messages between the two Boards shall be reduced to writing by the respective Clerks, and may be transmitted by the Messenger.

12. It shall be the duty of every Joint Committee (the Committee on Streets excepted) to whom any subject may be specially referred, to report thereon within five weeks, or ask for further time.

13. The Mayor shall be, *ex-officio*, Chairman of any Joint Special Committee of which he is a member.

14. In all Joint Standing Committees, except that on Finance, the member first named in the Board of Aldermen shall be Chairman; of the Committee on Finance, the member first named in the Common Council shall be chairman; and in all Joint Special Committees of which the Mayor is not a member, the member first named in the Board where the business originates, shall be chairman, and shall call the Committee together.

15. The reports of all Committees signed by a majority of the members, shall be made to the Board in which the business referred originated.

16. No Committee shall act by separate consultation, and no report shall be received unless agreed to in Committee actually assembled.

17. No Committee shall enter into any contract with, or purchase, or authorize the purchase of, any article, of any of its members.

18. No Chairman of any Committee shall audit or approve any bill or account against the City, for any supplies or services which shall not have been ordered or authorized by the Committee.

19. All reports and other papers submitted to the City Council shall be written in a fair hand, without endorsement, except in case of the introduction of an Order. In such case the member introducing an Order shall subscribe his name at the bottom of the back of the Order. All other endorsements upon the back of papers shall be made by the Clerks, and the Clerks of the Boards respectively shall, on seasonable notice, make copies of any papers to be reported by Committees, at the request of the respective chairmen thereof.

20. No business shall be transacted by the City Council in Convention, except such as shall have been previously agreed on, unless by unanimous consent.

21. After the annual appropriations shall have been passed, no subsequent expenditure shall be authorized for any object, unless provision for the same shall be made by a specific transfer from some of the appropriations contained in the annual resolution, or by expressly creating therefor a City debt; but no such debt shall be created unless the resolution authorizing the same pass by the affirmative votes of two-thirds of the whole number of each branch of the City Council voting by yea and nay.

22. In balloting for officers of the City, in Convention of the two Boards, blanks shall not be counted.

23. Either Board may propose to the other for its concurrence a time to which both Boards will adjourn; and neither shall adjourn without giving notice to the other Board through the Messenger or otherwise.

RULES AND ORDERS OF THE BOARD OF ALDERMEN.

First—The order of business shall be as follows :

1. The journal of the previous meeting shall be read.
2. Petitions shall next be called for, and be disposed of by reference or otherwise.
3. Such nominations, appointments and elections, as may be in order, shall be considered and disposed of.
4. The orders of the day shall be taken up ; meaning by the orders of the day, the business remaining unfinished at the previous meeting, and such communications as may have been subsequently sent up from the Common Council.
5. New business may be introduced by any member of the Board.

Second—Every Bill or Ordinance shall pass through the following stages before it shall be considered as having received the final action of this Board, viz :—first reading, second reading, passage to be enrolled, passage to be ordained ; and every Joint Resolution shall have two several readings before the question shall be taken on its final passage.

Third—A Bill or Ordinance may be rejected at either stage in its progress, but may not pass through all its stages in one day.

Fourth—Standing Committees shall be appointed as follows :

A COMMITTEE ON BILLS IN SECOND READING,
A COMMITTEE ON ENROLLMENT,
A COMMITTEE ON LICENSES,
A COMMITTEE ON LIGHTING STREETS,
A COMMITTEE ON POLICE AND POLICE STATIONS,
A COMMITTEE ON REPAIRS OF STREETS,
A COMMITTEE ON SETTING TREES,
A COMMITTEE ON WEIGHTS AND MEASURES.

Fifth—No member shall be interrupted while speaking, but by a call to order, or for the correction of a mistake; nor shall there be any conversation among the members while a paper is being read, or a question stated from the chair.

Sixth—A motion for the re-consideration of a vote shall be open to debate, but such motion shall not be considered unless made by a member voting with the majority, or unless notice thereof be given at a meeting at which the vote passed, in which case the motion shall be made at the next meeting after; and only one motion for the re-consideration of any vote shall be permitted.

Seventh—When any member is about to speak in debate he shall rise in his place and respectfully address the presiding officer; shall confine himself to the question under debate, and avoid personality.

Eighth—The above rules and order of business shall be observed in all cases, unless suspended by a vote of two-thirds of the members present, for a specific purpose.

RULES AND ORDERS OF THE COMMON COUNCIL.

1. The President shall take the chair precisely at the hour appointed for the meeting; call the members to order, and within ten minutes (or sooner if a quorum be present) he shall cause the roll to be called and the names of the absentees recorded. Before proceeding to business, he shall cause the minutes of the preceding meeting to be read. In the absence of the President, the oldest member present shall call the Council to order, and preside until a President *pro tempore* be chosen.

2. He shall preserve order and decorum; may speak to points of order in preference to other members, rising from his seat for that purpose, and shall decide questions of order, subject to an appeal to the Council by any member.

3. He shall rise to address the Council, to state facts, or to put a question, but may read sitting.

4. He shall declare all votes; but if a vote be doubted, the President shall, without further debate, require the members voting in the affirmative and negative to rise and stand until they are counted, and he shall declare the result.

5. He may call any member to the chair, but such substitution shall not extend beyond an adjournment; and when out of the chair the President may express his opinion on any subject under debate, and he shall not resume the chair while the same question is pending.

6. All questions shall be propounded in the order in which they are moved, unless the subsequent motion be previous in its nature; except that in naming sums and fixing times, the largest sum and the longest time shall be first put.

7. After a motion is stated by the President, it shall be disposed of by a vote of the Council, unless the mover withdraw it before a decision or amendment.

8. A motion to adjourn shall always be in order; that and the motion to lay on the table, shall be decided without debate.

9. The previous question shall be in this form: "Shall the main question be now put?" It shall only be admitted when demanded by a majority of the members present; and, until it is decided, shall preclude all amendment and further debate of the main question.

10. The yeas and nays shall be taken on any question upon the request of one-third of the members present.

11. When two or more members happen to rise at the same time, the President shall name the member who shall speak first.

12. When any member is about to speak in debate, or deliver any matter to the Council, he shall rise in his place and respectfully address the presiding officer, confining himself to the question under debate, and avoiding personality.

13. No member shall be mentioned in debate by his name, but may be described by the place he sits in, or such other designation as may be intelligible and respectful.

14. No member speaking shall be interrupted by another, but by a call to order or to correct a mistake. If any member in speaking or otherwise, transgress the rules of the Council, the President shall, or any member may call him to order; in which case the member so called to order shall immediately sit down, until the question of order is decided. If the decision be in favor of the member called to order, he shall be at liberty to proceed; if otherwise, he shall not proceed without leave of the Council.

15. No member shall speak more than twice to the same question, without obtaining leave of the Council.

16. Whilst the President or any other member is speaking, none shall stand up or pass unnecessarily before the person speaking.

17. Every motion shall be reduced to writing, if the President or any member require it.

18. When a question is under debate, no motion shall be received but to adjourn, to lay on the table, for the previous question, to postpone to a certain day, to commit, to amend, or to postpone indefinitely; which several motions shall have precedence in the order in which they are arranged; and no motion to postpone or commit shall be allowed twice in the same day, in the same stage of the ordinance or proposition.

19. A motion for the reconsideration of a vote shall be open to debate, but such motion shall not be considered unless made by a member voting with the majority, or unless notice thereof be given at the meeting at which the vote passed, in which case the motion shall

be made at the next meeting after; and only one motion for the reconsideration of any vote shall be permitted.

20. Every member who shall be in the Council when a question is put shall give his vote unless the Council, for special reasons, excuse him.

21. No motion or proposition on a subject different from that under consideration shall be admitted under color of an amendment.

22. All motions and reports may be committed or re-committed at the pleasure of the Council.

23. The division of a question may be called for when the sense will admit of it.

24. When the reading of a paper is called for and objected to, it shall be determined by a vote of the Council.

25. No standing order of the Council shall be suspended, unless three-fourths of the members present consent thereto; nor shall any rule or order be repealed or amended, without one day's notice being given of the motion therefor, nor unless a majority of the whole Council concur therein.

26. All Committees, except such as the Council determine to select by ballot, shall be nominated by the President.

27. No member shall be obliged to serve on more than two Committees at the same time, or be Chairman of more than one.

28. All memorials and other papers addressed to the Council, shall be presented to the President, or by a member in his place, who shall explain the subject thereof, and they shall be taken up in the order in which they were presented, unless the Council shall otherwise direct.

29. Standing Committees shall be appointed on the following subjects:

ON BILLS IN SECOND READING,
ON ENROLLMENT,
ON ELECTIONS AND RETURNS.

30. No Committee shall sit during the sitting of the Council without special leave, except the Committee on the Second Reading of Bills and Ordinances, and the Committee on Enrollment.

31. The Rules of proceeding in the Council shall be observed in the Committee of the Whole, so far as they are applicable, except the Rule limiting the time of speaking.

32. When a Committee is nominated by the Chair, the person first named shall be Chairman. In election of Committees by ballot when a Chairman is not specially chosen, the person having the highest number of votes shall act as Chairman, and, in case of an equality in votes between two or more members of a Committee, the members thereof shall choose a Chairman.

33. All Ordinances and Resolutions shall have two several readings before they shall be finally passed by this Council.

34. All Ordinances before being read a second time, shall be referred to the Committee on the Second Reading of Bills and Ordinances, and after being reported upon by said Committee, shall be again read, after which second reading, the question shall be on passing the same to be enrolled.

35. No Ordinance or Resolution imposing penalties or authorizing the expenditure of money, shall have more than one reading the same day.

36. The seats of the Common Council shall be numbered and determined by lot, and no member shall change his seat but by permission of the President.

37. All Committees of the Council shall consist of three members, unless a different number be specially ordered. And no report shall be received from any Committee, unless agreed to in Committee actually assembled; and all reports shall be in writing.

38. It shall be the duty of every Committee of the Council, to whom any subject may be specially referred, to report thereon within five weeks, or ask for further time.

39. The Clerk shall keep brief minutes of the votes and proceedings of the Council, entering thereon all accepted Resolutions; shall notice reports and memorials, and other papers submitted to the Board, only by their titles, or a brief description of their purport.

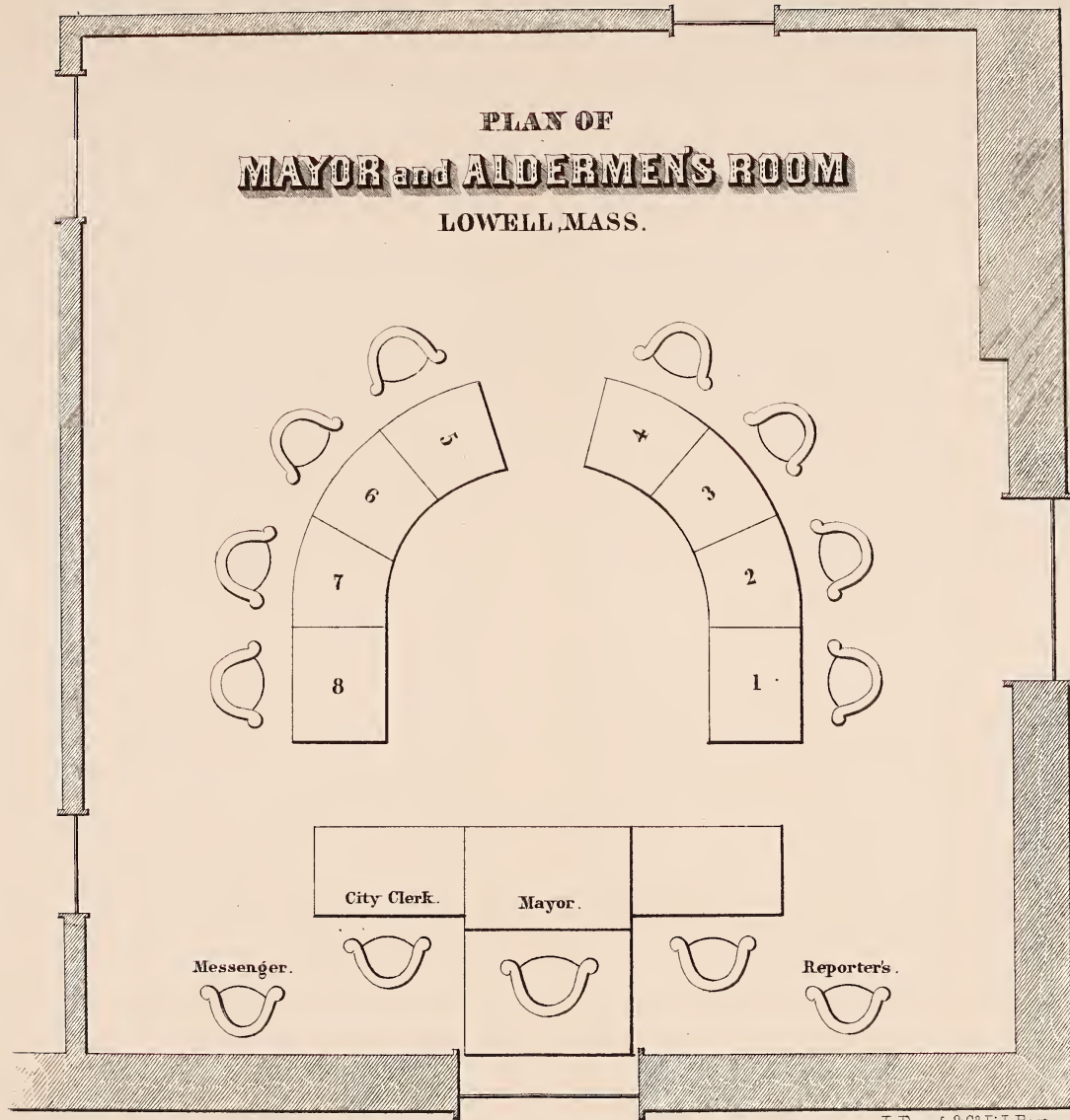
40. All salary officers shall be chosen by written ballots, and blanks shall not be counted.

41. Members of the Council may attend meetings of any of its Committees, but shall not vote thereat.

42. The Clerk of the Common Council shall keep the record of Committees who may require that service; and on the appointment of every Standing Committee a book for records shall be provided by its Chairman, or by said Clerk. The Clerk shall have the custody of all minutes by him kept; and the records of the several Committees shall be open to the inspection of the members of the City Council.

PLAN OF MAYOR and ALDERMEN'S ROOM

LOWELL, MASS.



L. Prang & Co. Lith. Boston.

FRANCIS JEWETT,

Mayor.

1 — BENJ. WALKER,

2 — GEORGE STEVENS,

3 — ALONZO F. CASWELL,

4 — JONATHAN KENDALL,

5 — NATHANIEL C. SANBORN,

6 — GEORGE L. HUNTOON,

7 — JOSEPH S. BROWN,

8 — JEREMIAH CROWLEY.

SAMUEL A. McPHETRES, *City Clerk.*

JOHN H. NICHOLS, *Messenger.*

GOVERNMENT OF THE CITY OF LOWELL, 1874.

MAYOR:

FRANCIS JEWETT,

Middlesex Street.

ALDERMEN:

JEREMIAH CROWLEY,..... Bowers Street.

BENJ. WALKER,..... 20 Appleton Street.

ALONZO F. CASWELL,..... 174 Merrimack Corporation.

JOSEPH S. BROWN,..... Myrtle Street.

JONATHAN KENDALL,..... 235 Central Street.

GEORGE L. HUNTOON,..... 11 Butterfield Street.

NATHANIEL C. SANBORN,..... 120 East Merrimack Street.

GEORGE STEVENS,..... 40 Chestnut Street.

COMMON COUNCIL:

NATHAN W. FRYE, PRESIDENT.

Ward One.

CHARLES A. WELCH,.....70 Merrimack Corporation.
 FRANK BRADY,.....Cor. Suffolk and Cross Streets.
 STEPHEN J. SMILEY,.....29 Lowell Machine Shop.
 CHARLES H. HARVEY,.....38 Worthen Street.

Ward Two.

DANIEL STICKNEY,.....21 Third Street.
 EDWARD P. WOODS,.....West Sixth Street.
 CHARLES J. EASTMAN,.....49 Massachusetts Corporation.
 EDWARD E. REED,.....74 Boott Corporation.

Ward Three.

JULIUS C. JOCKOW,.....Agawam Street.
 JAMES OWENS,.....37 Walnut Street.
 JAMES A. LOUGHLIN,.....7 Lawrence Street.
 GEORGE W. TILTON,.....41 Walnut Street.

Ward Four.

CHARLES T. GODDARD,.....396 Middlesex Street.
 NATHAN W. FRYE,.....Cor. Tanner and Howard Streets.
 JACOB H. SAWYER,.....Highland Street.
 JULIAN A. RICHARDSON,.....179 Middlesex Street.

Ward Five.

JARED P. MAXFIELD,.....10 Cabot Block, Cabot Street.
 JOHN B. LYFORD,.....Fletcher, near Dane Street.
 SAMUEL P. MARIN,.....Mt. Washington Street.
 JOHN SCOTT,.....9 Butterfield Street.

Ward Six.

GEORGE W. S. HURD,.....48 High Street.
 JOEL A. ABBOTT,.....42 High Street.
 THOMAS CAROLIN,.....89 East Merrimack Street.
 JASON FULLER,.....10 Nesmith Street.

**PLAN OF
COMMON COUNCIL ROOM
LOWELL, MASS.**

The diagram illustrates the layout of the Common Council Room. It features a large, U-shaped arrangement of 24 seats, numbered 1 through 24 in a clockwise direction starting from the bottom right. The seats are organized into two main sections: the left section contains seats 13 through 24, and the right section contains seats 1 through 12. At the front of the room, there are four distinct positions for officials, each marked with a seat icon: the Clerk's desk is positioned centrally above the main seating area; the President's desk is located directly below the Clerk's; the Messenger's desk is situated to the left of the President's; and the Reporters' desk is to the right. The entire room is enclosed within a thick, dark border representing the walls and structural elements of the building.

JOHN H. NICHOLS, *Messenger.*

CITY CLERK.

SAMUEL A. McPHETRES,.....School, corner Bowers Street.

Chosen in Convention of the City Council, on the first Monday in January, City Charter, § 4.
An Assistant City Clerk may be appointed by the Mayor and Aldermen, whenever the City Clerk desires it. See Ordinance passed June 11, 1873.

CLERK OF COMMON COUNCIL.

GEORGE GARDNER,.....Mt. Washington Street.

Chosen on the first Monday in January. City Charter, § 5.

MESSENGER TO THE CITY COUNCIL.

JOHN H. NICHOLS,.....Cor. Bridge and Jewett Streets.

Chosen by concurrent vote in January. See Ordinance in this Register.

MEETINGS OF THE CITY COUNCIL.

The regular Meetings of the City Council are held at the City Government Rooms, on the Second and Fourth Tuesday of each month, at 7½ o'clock in the evening, as follows:

January.....13th and 27th	July.....14th and 28th
February.....10th and 24th	September..... 8th and 22nd
March.....10th and 24th	October.....13th and 27th
April.....14th and 28th	November.....10th and 24th
May.....12th and 26th	December..... 8th and 22nd
June..... 9th and 23rd	

COMMITTEES OF THE CITY GOVERNMENT.

JOINT STANDING COMMITTEES.

ON ACCOUNTS. Aldermen Brown and Kendall; Messrs. Goddard, Maxfield, and Marin.

ON BOARD OF HEALTH. The Mayor, Alderman Caswell; Messrs. Welch, Lyford, and Loughlin.

ON CLAIMS. Aldermen Stevens and Walker; Messrs. Loughlin, Abbott, and Harvey.

ON COMMONS. Aldermen Kendall and Huntoon; Messrs. Woods, Fuller, and Carolin.

ON FINANCE. The Mayor; Messrs. Frye, Sawyer, and Woods.

ON FIRE DEPARTMENT. Aldermen Caswell and Sanborn; Messrs. Brady, Owens, and Hurd.

ON LANDS AND BUILDINGS. Aldermen Walker and Stevens; Messrs. Sawyer, Jockow, and Woods.

ON MILITARY AFFAIRS. The Mayor, Aldermen Caswell and Brown; Messrs. Smiley, Stickney, Maxfield, Richardson, Tilton, and Carolin.

ON PRINTING. Aldermen Huntoon and Caswell; Messrs. Goddard, Hurd, and Marin.

ON PUBLIC INSTRUCTION. Aldermen Crowley and Stevens; Messrs. Welch, Eastman, and Scott.

ON SEWERS AND DRAINS. Aldermen Sanborn and Brown; Messrs. Sawyer, Brady and Reed.

ON STREETS. The Mayor, Aldermen Huntoon and Crowley; Messrs. Jockow, Stickney, Owens, Richardson, and Lyford.

GEORGE E. EVANS, Clerk to Committee on Streets, and Sewers and Drains.

STANDING COMMITTEES.

OF THE BOARD OF ALDERMEN.

ON BILLS IN SECOND READING. Aldermen Walker and Caswell.

ON ENROLLMENT. Aldermen Crowley and Brown.

ON LICENSES. The Mayor, Aldermen Stevens and Sanborn.

ON LIGHTING STREETS. The Mayor, Aldermen Huntoon and Crowley.

ON POLICE AND POLICE STATIONS. The Mayor, Aldermen Crowley and Stevens.

ON REPAIRS OF STREETS. The Mayor, Aldermen Huntoon and Kendall.

ON SETTING TREES. Aldermen Kendall and Brown.

ON WEIGHTS AND MEASURES. The Mayor, Aldermen Sanborn and Walker.

OF THE COMMON COUNCIL.

ON BILLS IN SECOND READING. Messrs. Smiley, Tilton and Scott.

ON ENROLLMENT. Messrs. Loughlin, Harvey and Fuller.

ON ELECTIONS AND RETURNS. Messrs. Abbott, Reed and Eastman.

CITY OFFICERS, 1874.

CITY TREASURER AND COLLECTOR OF TAXES.

JOHN H. McALVIN,.....Office, City Hall.

Chosen by the City Council in Convention in January. Ord. pp. 42, 167. Deputy Collectors are selected and appointed by the Treasurer.

AUDITOR OF ACCOUNTS.

GEORGE GARDNER,.....Office, City Hall.

Chosen by concurrent vote in January or February. Ord. p. 167.

SUPERINTENDENT OF STREETS.

JOHN C. WOODWARD,...Office, at Civil Engineer's Room, City Hall.

Chosen by concurrent vote in January or February. Ord. p. 167.

SURVEYORS OF HIGHWAYS.

FRANCIS JEWETT, Mayor; Alderman JEREMIAH CROWLEY; Councilman JULIAN A. RICHARDSON.

Chosen by concurrent vote in January or February. Ord. p. 167.

CIVIL ENGINEER FOR THE CITY.

GEORGE E. EVANS,.....Office, City Hall.

Chosen by concurrent vote in January or February. Ord. p. 167

CITY SOLICITOR.

JOHN F. McEVoy,.....Office, 43½ Central Street.

Chosen by concurrent vote in January or February. Ord. p. 167.

LIBRARIAN OF THE CITY LIBRARY.

MARSHALL H. CLOUGH,.....Office at the Library, Masonic Temple.

Chosen by concurrent vote in January or February. Ord. p. 167.

DIRECTORS OF THE CITY LIBRARY.

FRANCIS JEWETT, Mayor,..... } *Ex*
 NATHAN W. FRYE, President of the Common Council,... } *Officiis.*

Ward 1—JOHN M. PEVEY,	|	Ward 4—J. A. G. RICHARDSON,
Ward 2—DANIEL SHERWOOD,		Ward 5—GEORGE SMITH,
Ward 3—ALBERT A. HAGGETT,		Ward 6—JAMES C. ABBOTT,

The last six are chosen by concurrent vote in January or February. Ord. p. 133.

SUPERINTENDENT OF PUBLIC BUILDINGS.

LORENZO G. HOWE,.....Office, City Hall.

Chosen by concurrent vote in January or February. Ord. p. 167.

CITY PHYSICIAN.

HERMON J. SMITH,.....Office, 9 John Street.

Chosen by concurrent vote in January or February. Ord. p. 167.

SUPERINTENDENT OF BURIALS.

HERMON J. SMITH,.....Office, 9 John Street.

Chosen by concurrent vote in January or February. Ord. p. 167.

ASSESSORS OF TAXES.

FRANCIS GOWARD,
WILLIAM W. READ,

JAMES MARREN,
ISAAC A. FLETCHER,

LEVI B. STEVENS.

FRANCIS GOWARD, *Chairman.*

JAMES MARREN, *Secretary.*

ASSIGNMENT OF WARDS.

Ward 1—JAMES MARREN,
Ward 2—WILLIAM W. READ,
Ward 3—ISAAC A. FLETCHER,

Ward 4—FRANCIS GOWARD,
Ward 5—LEVI B. STEVENS,
Ward 6—JAMES MARREN.

Chosen by concurrent vote in January or February. Ord. p. 167.

OVERSEERS OF THE POOR.

FRANCIS JEWETT, Mayor,....*ex officio.*

ALDERMEN:

JEREMIAH CROWLEY,

JOSEPH S. BROWN.

COMMON COUNCILMEN:

Ward 1—STEPHEN J. SMILEY,
Ward 2—EDWARD P. WOODS,
Ward 3—JAMES OWENS,

Ward 4—JULIAN A. RICHARDSON,
Ward 5—JARED P. MAXFIELD,
Ward 6—JASON FULLER.

SUB-COMMITTEES.

On Fuel and Out-door Relief.—The Mayor, Aldermen Crowley and Brown.

On Agriculture, Neat Cattle and Swine.—Alderman Brown, Councilmen Richardson and Woods.

On Repairs of Buildings.—Alderman Brown, Councilmen Richardson and Smiley.

On Clothing, Bedding and Furniture.—Alderman Crowley, Councilmen Maxfield and Fuller.

On Provisions and Supplies.—The Mayor, Alderman Brown, Councilmen Owens, Smiley and Fuller.

On Reform School.—The Mayor, Alderman Crowley, Councilmen Woods, Owens and Maxfield.

FRANCIS JEWETT, *Chairman,*

JARED P. MAXFIELD, *Secretary.*

The regular meetings of the Board of Overseers are held at the Almshouse on the last day of each month.

ALMSHOUSE.

There is now connected with the Almshouse a Workhouse used for the imprisonment of certain convicts, and "The House for the Employment and Reformation of Juvenile Offenders in the City of Lowell." The Poor Farm embraces about one hundred and twenty-five acres, seventy-five of which are in a high state of cultivation.

LORENZO PHELPS, *Superintendent*. WILLIAM A. LANG, *Chaplain*.

There is also one Male Assistant, and one Female Assistant. The Superintendent is appointed by the Overseers of the Poor, annually, at the last meeting in December.

MEMBERS OF THE LOWELL WATER BOARD.

LEVI SPRAGUE, *Chairman*.

FROM THE CITY COUNCIL.

Alderman NATHANIEL C. SANBORN; *Councilmen* NATHAN W. FRYE,
and GEORGE W. S. HURD.

FROM THE CITIZENS AT LARGE.

LEVI SPRAGUE, term expires May, 1875. WILLIAM F. SALMON,* term
expires ———, ———.

Superintendent, SAMUEL P. GRIFFIN; *Clerk*, FITZ H. SPALDING.

The members of the Lowell Water Board are elected under the provisions of an Ordinance passed July 11, 1872, entitled "An Ordinance providing for the care and management of the Lowell Water Works," which will be found among the Ordinances published in this Register. The Superintendent and Clerk are appointed by the Board.

POLICE DEPARTMENT.

Ord. p. 170. Act of 1867, Chap. 279.

The members of this Department are appointed as Police Officers and Watchmen with all the powers of Constables, except the power of serving and executing civil process, by the Mayor, subject to confirmation or rejection by the Aldermen, and hold their offices during the pleasure of the Mayor and Aldermen. Under the present

* By a failure to elect in March or April, 1874, Mr. Salmon continues in office until another is elected in his place. See Section 1 of "An Ordinance providing for the care and management of the Lowell Water Works," passed July 11, 1872.

organization the Police are divided into Day and Night Police. The Day Police are stationed at the Police Office, under the direction and command of the City Marshal; and in addition to their other duties, are required to serve criminal precepts.

CITY MARSHAL.

WILLIAM H. CLEMENCE, . . Office, west end of Market House Building.

Chosen by concurrent vote in January or February. Ord. p. 167.

DEPUTY MARSHAL.

JACOB G. FAVOR, Office, west end of Market House Building.

Appointed by City Marshal, and approved by Mayor and Aldermen. Ord. p. 171.

DAY POLICE OFFICERS AND WATCHMEN.

SQUIRE L. BAILEY,
LEVI BROWN,
WM. H. CLEMENCE, *
ALFRED DAY,
WILLIAM P. FARRINGTON,
JACOB G. FAVOR,

HARRISON H. FULLER,
WILLIAM M. LEE,
HENRY MARSHALL,
BENJAMIN G. MOONEY,
THOMAS J. SANBORN,
JAMES E. WEBSTER,

LEVI H. WITHAM.

NIGHT POLICE OFFICERS AND WATCHMEN.

THEOPHILUS C. BLAISDELL, Captain of the Night Police.

ALLEN P. BICKFORD,
ANDREW BLOOD,
JOHN BUCHANAN,
OTIS BULLARD,
WILLIAM L. CLARK,
CHAS. F. COOPER,
JOHN DOUGHERTY,
ASA F. ESTY,
HENRY FARRINGTON,
AUGUSTUS B. FOSS,
HENRY GARRISON,
DAVID H. GOODHUE,
FRANK GOODWIN,
CHARLES HOWARD,
THOMAS INGALLS,

PATRICK KELLEY,
CHARLES C. LANGLEY,
ALBERT E. LIBBY,
ISAAC L. LIBBY,
JOHN A. MELOY,
FRANK N. MILES,
ALONZO PAGE,
MASON W. PRESBY,
DANIEL H. SINCLAIR,
FRANK T. THISSELL,
JOHN W. TILTON,
LUKE VEO,
THOMAS WALSH,
STEPHEN L. YOUNG.

Appointed by the Mayor and Aldermen, from time to time. Ord. Sept. 24, 1867.

SUPERNUMERARY POLICE OFFICERS AND WATCHMEN.

WILLIAM H. ADAMS,
STEPHEN BARTLETT,
JOHN CALLAHAN,
DANIEL CRANE,
MOSES DAVENPORT,
MICHAEL F. FLYNN,
JEROME GILBERT,
DANIEL HAYES,
DIXON GREENOUGH,
ORISON S. LEWIS,

WILLIAM M. LOCKE,
JOHN F. MCCAFFREY,
FRANK MCQUADE,
JACOB R. SMITH,
HENRY M. THOMPSON,
HERMON N. TILTON,
GILBERT TRUEWORTHY,
ALDEN A. USHER,
PETER WATSON,
JOSEPH R. WELCH.

POLICE OFFICERS AND WATCHMEN NOT PAID BY THE CITY.

Oramel A. Brigham,	For Boston & Lowell Railroad Co.
Eben Meserve,	" " " " "
Warren D. Foss,	" Appleton Company.
Thomas A. Fletcher,	" Boott Cotton Mills.
Edward Garner,	" Hamilton Manufacturing Company.
Elisha A. Thomas,	" " and Appleton Companies.
William S. Knapp,	" Lawrence Manufacturing Company.
Allen Files,	" Lowell Manufacturing Company.
Cyrus F. Hill,	" " " "
Augustus F. Nelson,	" " Machine Shop.
Mark C. Whitney,	" " " "
William M. Mitchell,	" " " "
Alvah F. Hoyt,	" Massachusetts Cotton Mills.
Charles F. Capen,	" Middlesex Company.
Otis J. Brown,	" Tremont and Suffolk Mills.
Jacob K. Chase,	" " " " }
	and Lawrence Manufacturing Co.
Edmund Thomas,	" Guard Locks.
Thomas Hogan,	" Lowell Hosiery Company,
Robert Dawson,	" " " "
Joseph D. Pinder,	" the several Corporations.
Joseph Field,	" Freewill Baptist Church.
Benjamin W. Jewett,	" " " "
Thomas E. Saunders,	" First Baptist Church.
George W. Fullerton,	" Central M. E. Church.
James A. Stackpole,	" Kirk Street Congregational Church.
Alphonzo Merrill,	" Fifth Street Chapel.

Lorenzo Phelps,.....	For Lowell Almshouse.
John C. Woodward,.....	" City and City Stables.
Thomas H. Clough,.....	" U. S. Cartridge Company.
Samuel Beck,.....	" { Massachusetts Society for the Pre- vention of Cruelty to Animals.
Horace J. Conant,.....	" Merchants' Bank.
Nelson N. Holmes,.....	" Engine House, Low'll Water Works.
William W. Rock,.....	" Whipple's Mills.
James Stackpole,.....	" Stackpole Street.
Sidney B. Tompkins,.....	" Hanson Stable, Rock Street.
William M. Jones,.....	" Rogers' farm, Lowell.
Henry M. Abbott,.....	" Coburn Shuttle Company.
George Lassell,.....	" J. C. Ayer & Co.'s building.
Alonzo B. Stevens,.....	" The Lowell Choral Society.
Warren Fletcher,.....	" Huntington Hall building,
Joel M. Thurston,.....	" Davis, Melendy & Sargent's Mills.
Nathaniel M. Lamson,.....	" Savings B'k building, Shattuck St.

CONSTABLES.

WILLIAM H. CLEMENCE,
JACOB G. FAVOR,
DANIEL G. GREENLEAF,
JAMES HOPKINS,
BICKFORD LANG,

BRADFORD MARVEL,
JOHN H. NICHOLS,
THOMAS W. PRESSEY,
DEXTER SYMONDS,
DANIEL G. TAYLOR.

City Charter, Section 7; Ord. p. 168.

TYTHINGMEN.

WILLIAM H. CLEMENCE,
LEVI BROWN,
ALFRED DAY,
AUGUSTUS B. FOSS,
BENJAMIN G. MOONEY,
BICKFORD LANG,

HARRISON H. FULLER,
THOMAS J. SANBORN,
WILLIAM P. FARRINGTON,
JACOB G. FAVOR,
JESSE HUSE.

HEALTH COMMISSIONER.

WILLIAM H. CLEMENCE.

Chosen by concurrent vote, commencing in the Board of Aldermen, in January or February.
Ord. p. 167.

SURVEYORS OF LUMBER.

GEORGE W. KELLEY,
 LORENZO G. HOWE,
 JAMES N. MORSE,
 JOSHUA M. HADLEY,
 ALFRED P. BATEMAN,
 ATIS OSGOOD,

STEPHEN C. DAVIS,
 LUTHER SMITH,
 SAMUEL NEWHALL,
 HENRY L. TIBBETTS,
 GEORGE A. ROPER,
 AARON BLANCHARD.

Four or more chosen by concurrent vote, commencing in the Board of Aldermen, in January or February. Ord. p. 167.

FENCE VIEWERS.

LORENZO PHELPS,

ISAAC PAGE.

JOSHUA M. HADLEY,

Chosen by concurrent vote, commencing in the Board of Aldermen, in January or February, Ord. p. 167.

FIELD DRIVERS.

WILLIAM H. CLEMENCE,
 HENRY MARSHALL,
 WILLIAM M. LEE,

ALFRED DAY.

THOMAS J. SANBORN,
 WILLIAM P. FARRINGTON,
 THOMAS PAUL,

Chosen by concurrent vote, commencing in the Board of Aldermen, in January or February, Ord. p. 167.

POUND KEEPER.

SYLVESTER CROSBY.

Chosen by concurrent vote, commencing in the Board of Aldermen, in January or February, Ord. p. 167.

MEASURER OF WOOD AND BARK.—SUPERINTENDENT
 OF CITY SCALES.—INSPECTOR OF BALE
 OR BUNDLE HAY.

SYDNEY DAVIS. . Office at City Scales, rear of Market House Building.

Appointed by the Mayor and Aldermen in January or February. Ord. p. 168.

WEIGHERS OF COAL.

SYDNEY DAVIS,
AUGUSTUS W. WEEKS,

FRANK E. BENNETT,
JOHN F. KINSELA.

Appointed by the Mayor and Aldermen in January or February. Ord. p. 168, amended 1872.

SEALER OF WEIGHTS AND MEASURES.

JOHN A. KNOWLES, JR.....Office at Mechanics' Mills.

Appointed by the Mayor and Aldermen in January or February. Ord. p. 168.

INSPECTOR OF MILK.

JOHN A. KNOWLES, JR.....Office at Mechanics' Mills.

Appointed by the Mayor and Aldermen in January or February. Ord. p. 168.

SURVEYORS OF PLASTERING, BRICK OR STONE
WORK, AND PAINTING.

SAMUEL NEWHALL,
RICHARD W. BAKER,
LUTHER SMITH,

JOSHUA M. HADLEY,
WILLIAM F. OSGOOD,
ATIS OSGOOD,

GEORGE W. KELLEY.

Appointed by the Mayor and Aldermen in January or February. Ord. p. 168.

MEASURERS OF GRAIN.

JAMES BERRY,

GEORGE W. TILTON.

Fees $2\frac{1}{2}$ mills per bushel for measuring. Appointed by the Mayor and Aldermen in January or February. Ord. p. 168.

WEIGHER OF HAY AND OTHER ARTICLES.

Forty per cent. of his fees are payable to the City, quarterly. Appointed by the Mayor and Aldermen in January or February. Ord. p. 168.

MEASURERS OF WOOD AND BARK BROUGHT BY WATER OR RAILROAD CARS INTO THE CITY.

SAMUEL NEWHALL,

|
GEORGE W. KELLEY.

LUTHER SMITH,

Appointed by the Mayor and Aldermen in January or February. Ord. p. 168.

INSPECTORS OF PETROLEUM OILS.

DAVID CHASE,

|
GEORGE HOBSON.

Appointed by the Mayor and Aldermen. Chapter 262 of the Acts of 1866.

CITY CRIER.

ROGER McCANN.....Office, 23 Pearl Street.

Appointed by the Mayor and Aldermen in January or February. Ord. p. 168.

MEASURERS OF UPPER LEATHER.

NATHAN W. FRYE,

|
REVILO F. COOK.

JOHN Q. A. HUBBARD,

Appointed by the Mayor and Aldermen in April. Ord. p. 168.

JANITOR OF HUNTINGTON AND JACKSON HALLS.

WARREN FLETCHER.

Appointed by the Mayor.

FIRE DEPARTMENT FOR 1874-5.

The members of the Fire Department are appointed by the Mayor, subject to the confirmation or rejection of the Aldermen, on the first Wednesday in April, annually, and hold their respective offices for the term of one year from the first day of May next succeeding their appointment, provided, however, that vacancies may be filled at any time, and the Chief Engineer and the Assistant Engineers may be removed at any time by the Mayor and Aldermen.

Ord. pp. 145, 168; Chap. 83 of the Acts of 1868.

CHIEF ENGINEER.

GEORGE HOBSON.....24 Linden Street.

ASSISTANT ENGINEERS.

CHARLES H. ARLEN.....Perrin Street.
 SAMUEL W. TAYLOR.....172 Merrimack Corporation.
 WILLIAM W. BATES.....158 School Street.
 HIRAM N. HALL.....Elliott Street.
 EDWARD S. HOSMER.....2 Livermore Street.

HIRAM N. HALL, *Clerk of the Board.*

The Clerk is chosen by the Engineers.

STEAM FIRE ENGINES.

Hope Steam Fire Engine Company, No. 1.

Middle Street.....13 Members.

HENRY W. BURTON, Foreman. | JEWETT J. LOCKE, Engineer.

Weight, 7,575 pounds. Cost, ——. Built in 1870, by Union Machine Company, of Fitchburg.

Torrent Steam Fire Engine Company, No. 2.

Middlesex Street.....13 Members.

RUEL F. BRITTON, Foreman. | GEORGE MADDOCKS, Engineer.

Weight, 7,720 pounds. Cost, \$4000. Built in 1868, by Hunne-
 man & Co., Boston.

Wamesit Steam Fire Engine Company, No. 3.

Middle Street.....13 Members.

JOSIAH W. WHITE, Foreman. | TORREY E. STRATTON, Engineer.

Weight, 7,650 pounds. Cost, \$4,250. Built in 1866, by Hunne-
 man & Co., Boston.

Relief Steam Fire Engine Company, No. 4.

Warren Street.....———, Engineer.

Weight, 8,300 pounds. Cost, \$3000. Built in 1861, by Silsby,
 Mynderse & Co., Seneca Falls, N. Y.

HOSE CARRIAGES.

Ocean Hose Company, No. 1, Warren Street.

SAMUEL G. COOPER, Foreman.....12 Members.

Mechanics' Hose Company, No. 2, Cross Street.

GEORGE T. ANTHONY, Foreman.....12 Members.

Excelsior Hose Company, No. 3, Central Street.

JAMES F. NORTON, Foreman.....12 Members.

Mazeppa Hose Company, No. 4, Fayette Street.

WILLIAM KING, Foreman.....12 Members.

Wellman Hose Company, No. 5, Fourth Street.

JAMES ARMSTRONG, Foreman.....12 Members.

HOOK AND LADDER CARRIAGES.

Franklin Hook and Ladder Company, Middle Street.

WILLIAM K. DOE, Foreman.....29 Members.

HAND ENGINES.

The Companies connected with the several Hand Engines were abolished May 1, 1868. The following Hand Engine was kept as a reserve :

Rocket, No. 2.....Ayer's City.

SUPERINTENDENT OF FIRE-ALARM TELEGRAPH.

TORREY E. STRATTON.....Engine House, Middle Street.

POLICE COURT.

NATHAN CROSBY.....*Standing Justice.*

GEORGE STEVENS, }
 JOHN DAVIS, }*Special Justices.*

SAMUEL P. HADLEY.....*Clerk.*

Chosen at the Municipal Election, 1871, and every fifth year thereafter, by the people. Gen. Stat. and Chap. 169 of the Acts of 1866.

SCHOOL COMMITTEE, 1874.

FRANCIS JEWETT, Chairman.

JOHN A. GOODWIN, Vice-Chairman.

CHARLES MORRILL, Secretary.

NAMES OF SCHOOL COMMITTEE.

FRANCIS JEWETT, Mayor,.....	}	<i>Ex</i> <i>Officiis.</i>
NATHAN W. FRYE, President of the Common Council,...		
Ward 1—JAMES W. B. SHAW.....	Term expires	1874
WILLIAM HARDMAN*.....	"	" 1875
" 2—GEORGE H. PILLSBURY.....	"	" 1874
CYRUS H. LATHAM.....	"	" 1875
" 3—HENRY P. PERKINS.....	"	" 1874
GEORGE E. PINKHAM.....	"	" 1875
" 4—CHARLES KIMBALL.....	"	" 1874
WILLIAM H. ANDERSON.....	"	" 1875
" 5—WILLIAM G. WARD.....	"	" 1874
JOSIAH G. PEABODY.....	"	" 1875
" 6—JOHN A. GOODWIN.....	"	" 1874
BENJAMIN J. WILLIAMS.....	"	" 1875

STANDING COMMITTEES.

ON ACCOUNTS—Messrs. Jewett, Frye, Shaw, Ward, and Peabody.

ON SCHOOL HOUSES—Messrs. Shaw, Pinkham, Kimball, Pillsbury, and ———.

ON TEACHERS—Messrs. Kimball, Goodwin, Anderson, Pillsbury, and Pinkham.

ON REPORTS—Messrs. Williams, Anderson, Goodwin, Latham, and Frye.

ON BOOKS—Messrs. Anderson, Kimball, Goodwin, Shaw, Williams, and Perkins.

ON SALARIES—Messrs. Jewett, Frye, Peabody, Williams, and Pinkham.

* Deceased April 7, 1874.

ON PENMANSHIP AND DRAWING—Messrs. Goodwin, Pillsbury, Ward, Latham, and ———.

ON MUSIC—Messrs. Ward, Perkins, Pinkham, Shaw, and Latham.

ON FREE EVENING SCHOOLS—Messrs. Latham, Peabody, Ward, ———, and Perkins.

ON SUSPENSION OF THE SCHOOLS—Messrs. Jewett, Perkins, and Pillsbury.

SUB-COMMITTEES.

NATHAN W. FRYE—Sherman School; Primaries 13, 20, 24, 31, 57.

JAMES W. B. SHAW—Green School; Primaries 8, 12, 23, 29.

——— ——— —High School; Primaries 10, 38, 36, 11, 26, 43.

GEORGE H. PILLSBURY—High School; Primaries, 3, 7, 18, 21, 53.

CYRUS H. LATHAM—Varnum School; Primaries 46, 47, 48, 49, 55.

HENRY P. PERKINS—Edson School; Primaries 19, 39, 4, 54.

GEORGE E. PINKHAM—Franklin School; Primaries 33, 56, 27, 42.

CHARLES KIMBALL—High School; Primaries 17, 34, 50, 28.

WILLIAM H. ANDERSON—Colburn School; Primaries 5, 6, 15, 30.

WILLIAM G. WARD—Mann and High Schools; Primaries 2, 22, 32, 41, 44.

JOSIAH G. PEABODY—Bartlett School; Primaries 40, 45.

JOHN A. GOODWIN—High School; Primaries 14, 16, 25, 37.

BENJ. J. WILLIAMS—Moody School; Primaries 9, 35, 51, 52.

REGULAR MEETINGS OF THE SCHOOL COMMITTEE FOR 1874.

January 26, February 23, March 30, April 27, May 25, June 29, July 27, August 31, September 28, October 26, November 30, December 28.

CHARLES MORRILL, Superintendent of Public Schools.

Office, in the City Government Building.

OFFICE HOURS. From March 1st to November 30th, inclusive, one hour after morning session; from December 1st to the last day of February, inclusive, one hour after the afternoon session. Wednesday and Saturday afternoons, from 2 to 3 o'clock.

TRUANT AND POLICE OFFICERS.

BICKFORD LANG,

|

JESSE HUSE.

WARD OFFICERS, 1874.

WARD ONE.

Warden... John H. Durgin.
Clerk..... Silas D. Gordon.
Inspectors, William H. Emery.
William H. Hard.
Lewis L. Perrin.

WARD TWO.

Warden... Edwin Lamson.
Clerk..... Robert L. Read.
Inspectors, John S. D'Evelyn.
Frank D. Munn, Jr.
William A. Read.

WARD THREE.

Warden... Alvin Lawrence.
Clerk..... Arthur H. Benner.
Inspectors, Horace E. Moody.
Lucius W. Huntington.
Michael F. Clark.

WARD FOUR.

Warden... Charles E. Adams.
Clerk..... Edward P. Dennis.
Inspectors, Asahel D. Puffer.
Asa C. Russell.
Charles D. Colson.

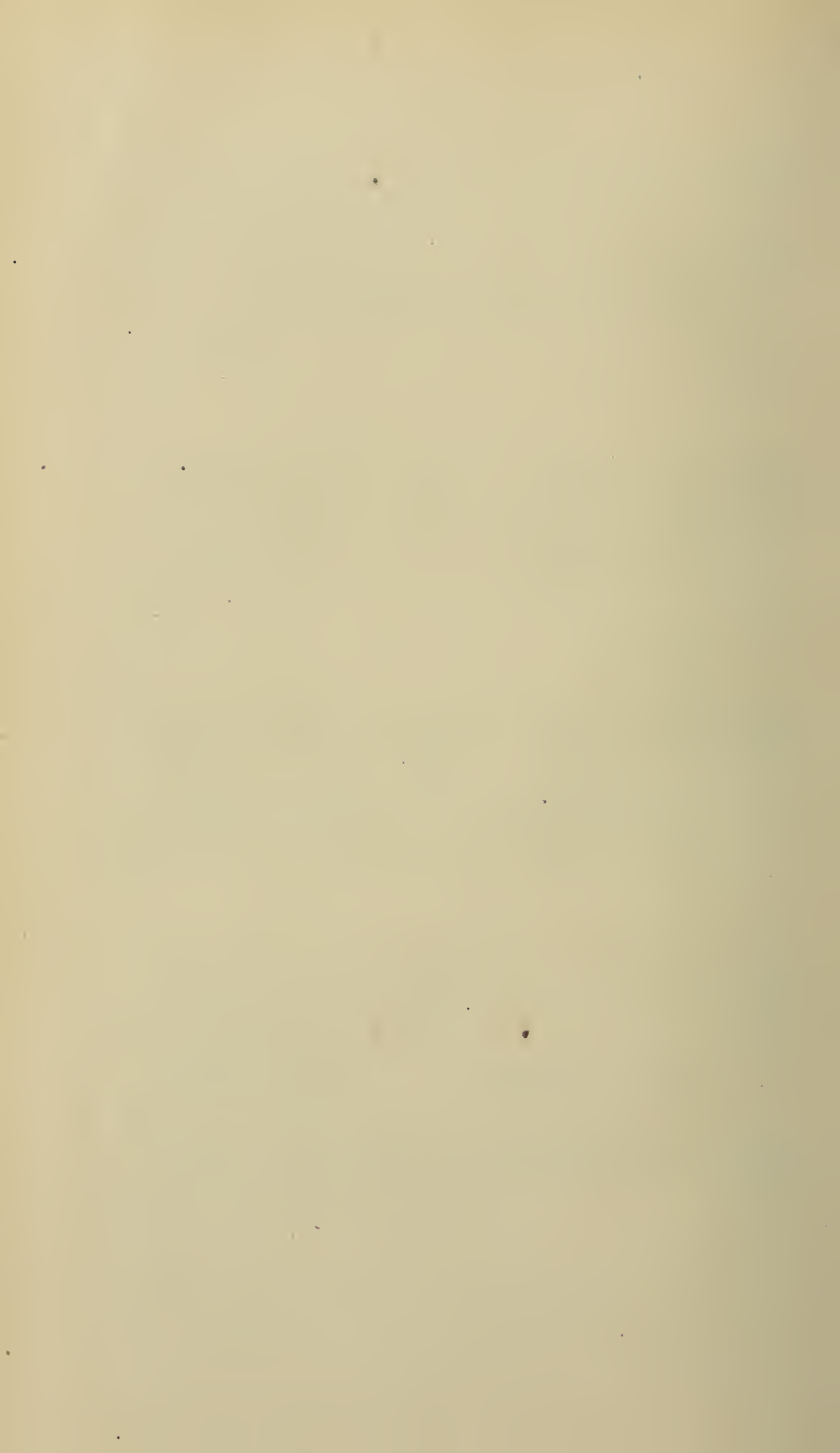
WARD FIVE.

Warden... William A. Fifield.
Clerk..... Wm. B. C. Stickney.
Inspectors, Frank B. Peabody.
Wilbur A. Stiles.
Joseph S. Lapierre.

WARD SIX.

Warden... William W. Clark.
Clerk..... Albert D. Wright.
Inspectors, Asa W. Mead.
Willis Farrington.
William H. Halstead.

Chosen annually at the Municipal Election, held on the Tuesday next after the second Monday in December. Amendment to the City Charter, approved March 12, 1847.



CATALOGUE

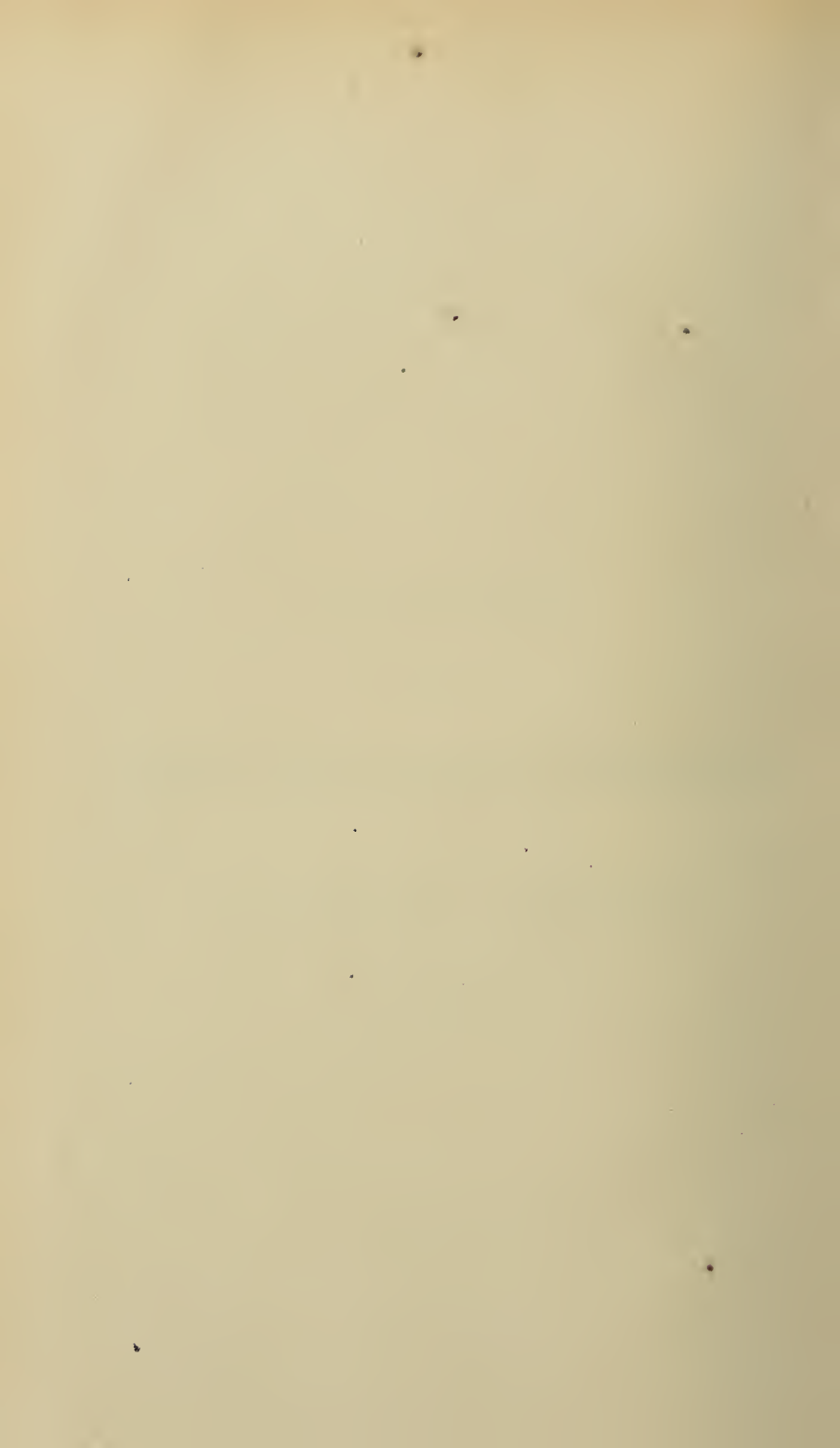
OF THE

GOVERNMENT OF THE CITY OF LOWELL,

IN

CHRONOLOGICAL ORDER OF SERVICE,

FROM ITS INSTITUTION, 1836, TO 1874.



1836.

Mayor:

ELISHA BARTLETT.

Aldermen:

William Austin, resigned Oct. 10,
Joseph Tapley, elected November,
Seth Ames,
Aaron Mansur,

Benjamin Walker,
Oliver M. Whipple,
Alexander Wright.

SAMUEL A. COBURN, *City Clerk*.

Common Council:

John Clark, *President*,
Henry J. Baxter,
Jonathan Bowers,
George Brownell,
James Cook,
David Dana,
Erastus Douglass,
Josiah B. French,
Cyril French,
Samuel Garland,
Horatio W. Hastings,
Horace Howard,

Stephen Mansur,
John Mixer,
Thomas Nesmith,
David Nourse,
Thomas Ordway,
James Russell,
John A. Savels,
Sidney Spalding,
Weld Spalding,
Jonathan Tyler,
Tappan Wentworth,
William Wyman.

GEORGE WOODWARD, *Clerk*, died. ALBERT LOCKE, elected.

1837.

Mayor:

ELISHA BARTLETT, †'36.

Aldermen:

Seth Ames, *'36,
John Aiken,
Seth Chellis,

Joseph G. Kittredge,
Joshua Swan,
Alexander Wright, *'36.

SAMUEL A. COBURN, *City Clerk*.

Common Council:

WARD 1.

Joshua Abbott,
James K. Fellows,
Jesse Phelps,
Walter Wright.

WARD 2.

William Fiske,
Thomas Nesmith, '36.
Josiah Osgood,
Joseph Tyler.

WARD 3.

Joseph M. Dodge,
Elisha Huntington, *President*,
William North,
Joseph Tapley.

WARD 4.

William Baker,
Elijah M. Read,
Charles H. Wilder,
William W. Wyman.

WARD 5.

George Brownell, '36,
Osgood Dane,
James Russell, '36.
Tappan Wentworth, '36.

WARD 6.

Andrew Bird,
Benjamin H. Gage,
Jona. T. P. Hunt,
Abram Tilton.

ALBERT LOCKE, *Clerk*.

The figures without other marks indicate membership of the Common Council those years.
† Mayor that year. * Alderman that year. † President of Common Council that year.

1838.

Mayor:

LUTHER LAWRENCE.

Aldermen:

Benjamin F. French,
Charles L. Tilden,
Oliver M. Whipple, * '36,

George H. Carleton,
George Brownell, '36, '37,
Seth Chellis, * '37.

THOMAS ORDWAY, *City Clerk*.

Common Council:

WARD 1.

Jesse Phelps, '37,
Walter Wright, '37,
Eliphalet Brown,
Perez Fuller.

WARD 2.

William Fiske, '37.
Aaron H. Sherman,
William Upham,
Henry J. Baxter, '36.

WARD 3.

Thomas Hopkinson,
Elisha Huntington, † '37, *President*,
Horace Howard, '36,
John Mixer, '36.

WARD 4.

David Dana, '36,
Perley Hale,
Benjamin Walker, * '36,
William Baker, '37.

WARD 5.

Garret J. Bradt,
Behjamin Wilde,
Erastus Douglass, * '36,
Rufus Paul.

WARD 6.

Eli Cooper,
Thomas L. Randlett,
James L. Foot,
Calvin Goodspeed.

ALBERT LOCKE, *Clerk*.

1839.

Mayor:

LUTHER LAWRENCE. — [Died in April.]

ELISHA HUNTINGTON, † '37, † '38.

Aldermen:

Benjamin F. French, * '38,
John O. Green,
Charles L. Tilden, * '38,

George H. Carleton, * '38,
John Clark, † '36,
Oliver M. Whipple, * '36, * '38.

THOMAS ORDWAY, *City Clerk*.

Common Council:

WARD 1.

Walter Wright, '37, '38,
Harlin Pillsbury,
Eliphalet Brown, '38,
Forrest Eaton.

WARD 2.

Jonathan Tyler, '36,
John Nesmith,
Henry J. Baxter, '36, '38,
Jefferson Bancroft.

WARD 3.

Thomas Hopkinson, '38, *President*,
Jacob Robbins,
John G. Locke.

WARD 4.

Benjamin Walker, * '36, '38,
Samuel Horn,
Stephen Carleton,
Stephen Mansur, '36.

WARD 5.

Tappan Wentworth, '36, '37,
Lewis McIntire, died Feb., '40,
Benjamin Wilde, '38,
Garret J. Bradt, '38.

WARD 6.

Thomas L. Randlett, '38,
Joseph S. Holt,
John L. Fitts,
Daniel Knapp.

ALBERT LOCKE, *Clerk*.

1840.**Mayor:**

ELISHA HUNTINGTON, †'37, †'38, †'39.

Aldermen:Jonathan Tyler, '36, '39,
John R. Adams,
Joseph Bedlow,Harlin Pillsbury, '39,
Seth Ames, *'36, *'37,
Stephen Mansur, '36, '39.THOMAS ORDWAY, *City Clerk*.**Common Council:****WARD 1.**Forrest Eaton, '39,
Sylvanus Adams,
Henry Patch,
R. M. Hutchinson.**WARD 2.**Jefferson Bancroft, '39,
John Nesmith, '39,
Joseph G. Kittredge, *'37,
Josiah Osgood, '37.**WARD 3.**Pelham W. Warren, *President*,
Abner W. Buttrick,
Asa Hall,
Samuel Burbank.**WARD 4.**Ferdinand Rodliff,
Ethan Burnap,
Edward F. Watson,
B. Walker, *'36, '38, '39, died Sept.**WARD 5.**Tappan Wentworth, '36, '37, '39,
Samuel W. Brown,
John J. Crane,
George Dane.**WARD 6.**Daniel Knapp, '39,
George L. Fitts, '39,
Joseph Battles,
Joshua Converse.ALBERT LOCKE, *Clerk*, died October. JOHN G. LOCKE, elected October.**1841.****Mayor:**

ELISHA HUNTINGTON, †'37, †'38, †'39, †'40.

Aldermen:Seth Chellis, *'37, '38,
Jefferson Bancroft, '39, '40,
Cyril French, '36,George H. Carleton, *'38, *'39,
John R. Adams, *'40.
John Aiken, *'37.THOMAS ORDWAY, *City Clerk*.**Common Council:****WARD 1.**Henry Patch, '40,
George Bragdon,
John W. Holland,
Arnold Welch.**WARD 2.**William Fiske, '37, '38,
Erasmus D. Leavitt,
Jonathan White,
Nathaniel Wilson.**WARD 3.**Samuel Burbank, '40,
Nathaniel Critchett,
Royal Southwick,
Edward Winslow.**WARD 4.**Ethan Burnap, '40,
William Livingston,
John Morrison,
Edward F. Watson, '40.**WARD 5.**Tappan Wentworth, '36, '37, '39,
'40, *President*,
Samuel W. Brown, '40,
John J. Crane, '40,
Phineas Whiting.**WARD 6.**Francis H. Bowers,
Isaac H. Cooper,
William Potter,
John Smith,JOHN G. LOCKE, *Clerk*.

1842.

Mayor:

NATHANIEL WRIGHT.

Aldermen:

Nathaniel Thurston,
 Jefferson Bancroft, '39, '40, '41,
 Cyril French, '36, *'41,

William Livingston, '41,
 Ithamar A. Beard,
 John W. Graves.

THOMAS ORDWAY, *City Clerk*.**Common Council:****WARD 1.**

Jeremiah P. Jewett,
 John Hadley,
 James Townsend,
 Edward J. Payne.

WARD 2.

John Nesmith, '39, '40,
 Erasmus D. Leavitt, '41,
 Joseph W. Mansur, *President*,
 James Hopkins.

WARD 3.

Nathaniel Critchett, '41,
 Ira Spalding,
 John Mead,
 Asa W. Willoughby.

WARD 4.

John Morrison, '41,
 William Carlton,
 Oliver March,
 Josiah B. French, '36.

WARD 5.

James Patterson,
 Isaac Appleton,
 Josiah Seavey,
 Roswell Douglass.

WARD 6.

James Russell, '36, '37,
 Jonathan Kendall,
 Varnum A. Shed,
 Isaac N. Fitts.

JOHN G. LOCKE, *Clerk*.

1843:

Mayor:

NATHANIEL WRIGHT, †'42.

Aldermen:

Harlin Pillsbury, '39, *'40, res'd June,
 Henry C. Johnson,
 Cyril French, '36, *'41, *'42,

S. Spalding, '36, resigned in June.
 Joseph Griffin,
 Charles L. Tilden, *'38, '39.

* THOMAS ORDWAY, *City Clerk*.**Common Council:****WARD 1.**

Daniel Bixby,
 Edward J. Payne, '42,
 Hugh Cummiskey,
 Walter Wright, '37, '38, '39.

WARD 2.

Henry J. Baxter, '36, '38, '39,
 John P. Simonds,
 Pliny Lawton,
 Ben Osgood.

WARD 3.

John Mead, '42,
 Willard Brown,
 Ira Spalding, '42,
 Benjamin J. Gerrish.

WARD 4.

Otis Allen,
 Alfred Gilman,
 Oliver March, '42, *President*,
 William Carlton, '42.

WARD 5.

James Patterson, '42,
 David Bradt,
 John L. Tripp,
 Benjamin F. Holden,

WARD 6.

John B. McAlvin,
 Cyrus Battles,
 Sewall G. Mack,
 Charles F. Mitchell,

JOHN G. LOCKE, *Clerk*.

1844.

Mayor:

ELISHA HUNTINGTON, †'37, †'38, †'39, †'40, †'41.

Aldermen:

Henry Smith,
Selwin Bancroft,
O. M. Whipple, *'36, *'38, *'39,

Edward F. Watson, '40, '41,
Joseph Griffin, *'43,
John Wright.

THOMAS ORDWAY, *City Clerk*.**Common Council:****WARD 1.**

Forrest Eaton, '39, '40,
Gilman N. Nichols,
Hugh Cummiskey, '43,
David Healey.

WARD 2.

John P. Simonds, '43,
Ben Osgood, '43,
Amos Merriam,
John Clark, †'36, *'39, *President*.

WARD 3.

Charles B. Coburn,
George Choate, *
Isaac Scripture,
William C. Gray.

WARD 4.

Asa Wetherbee,
Abner W. Buttrick, '40,
Horatio G. F. Corliss,
Charles H. Wilder, '37.

WARD 5.

John L. Tripp, '43,
David Bradt, '43,
John Wright,
Nathaniel Wright, Jr.

WARD 6.

Sewall G. Mack, '43,
James Russell, '36, '37, '42,
Jonathan Kendall, '42,
Gilman Gale.

JOHN G. LOCKE, *Clerk*.

1845.

Mayor:

ELISHA HUNTINGTON, †'37, †'38, †'39, †'40, †'41, †'44.

Aldermen:

Henry Smith, *'44,
Selwin Bancroft, *'44,
O. M. Whipple, *'36, *'38, *'39, *'44,

Edward F. Watson, '40, '41, *'44,
John C. Dalton,
Daniel Knapp, '39.

THOMAS ORDWAY, *City Clerk*.**Common Council:****WARD 1.**

Gilman N. Nichols, '39,
Danforth P. Brigham,
Jonathan Adams,
Willard C. Welch.

WARD 2.

John P. Simonds, '43, '44,
Daniel Balch,
William Brown,
Daniel S. Richardson, *President*.

WARD 3.

Isaac Scripture, '44,
William C. Gray, '44,
George Choate, '44,
Hapgood Wright.

WARD 4.

Abner W. Buttrick, '40, '44,
Asa Wetherbee, '44,
Charles H. Wilder, '37, '44,
Josiah Sawtell.

WARD 5.

Nathaniel Wright, Jr., '44,
Amos Hyde,
Edward Sherman,
James Fenno.

WARD 6.

Gilman Gale, '44,
John B. McAlvin, '43,
Samuel Fay, Jr.,
Lorenzo P. Wright.

JOHN G. LOCKE, *Clerk*.

1846.**Mayor:****JEFFERSON BANCROFT, '39, '40, *'41, *'42.****Aldermen:**

Henry Smith, *'44, *'45,
 Selwin Bancroft, '44, *'45,
 William C. Gray, '44, *'45,
 Joseph Butterfield,

John C. Dalton, '45,
 D. Knapp, '39, *'45, resigned July,
 Isaac Cooper, '41, elected August.

THOMAS ORDWAY, City Clerk.**Common Council:****WARD 1.**

Gilman N. Nichols, '39, '45,
 Danforth P. Brigham, '45,
 Willard C. Welch, '45,
 Thomas S. Hutchinson.

WARD 2.

Daniel Balch, '45,
 William Brown, '45,
 Daniel S. Richardson, †'45, *President*,
 Zadock Rogers.

WARD 3.

Hapgood Wright, '45,
 Isaac Farrington,
 Joel Powers,
 Franklin Mead.

WARD 4.

Josiah Sawtell, '45,
 Solon Stevens,
 David J. Moody,
 William Fletcher.

WARD 5.

Amos Hyde, '45,
 Horatio G. F. Corliss, '44,
 Jonathan Bowers, '36,
 Charles M. Short.

WARD 6.

Lorenzo P. Wright, '45,
 John L. Fitts, '39, '40,
 Lewis Packard,
 Columbus J. Hubbard.

JOHN G. LOCKE, Clerk.**1847.****Mayor:****JEFFERSON BANCROFT, '39, '40, *'41, *'42, †'46.****Aldermen:**

George Bragdon,
 Joseph Butterfield, *'46,
 Linus Child,
 James Fenno, '45,

Elisha Huntington, †'37, †'38,
 †'39, †'40, †'41, †'44, †'45,
 Sewall G. Mack, '43, '44,
 Stephen Mansur, '36, '39, *'40,
 Josiah Sawtell, '45, '46.

THOMAS ORDWAY, City Clerk.**Common Council:****WARD 1.**

William Conihe,
 James C. Crombie,
 David S. Bachelder,
 Jesse Huse.

WARD 2.

Samuel W. Brown, '40, '41,
 Hannibal Powers,
 William Newman,
 Otis L. Allen.

WARD 3.

Joel Powers, '46,
 Franklin Mead, '46,
 Isaac Farrington, '46,
 Samuel G. Davis.

WARD 4.

Joel Adams, *President*,
 Horatio Fletcher,
 Solon Stevens, '46,
 Stephen A. Coburn.

WARD 5.

Ignatius Tyler,
 Edward C. Johnson,
 Elihu Gates,
 Charles M. Short, '46.

WARD 6.

Thomas Wentworth,
 Isaac N. Parker,
 John R. Southwick,
 Isaiah Morse.

JOHN G. LOCKE, Clerk.

1848.**Mayor:**

JEFFERSON BANCROFT, '39, '40, *'41, *'42, †'46, †'47.

Aldermen:

David Dana, '36, '38,
 Erastus Douglass, '36, '38,
 Jacob Graves, resigned in June,
 William Newman, '47,

Gilman N. Nichols, '39, '45, '46,
 Daniel S. Richardson, †'45, †'46,
 Josiah Sawtell, '45, '46, *'47,
 O. M. Whipple, *'36, *'38, *'39, *'45.

THOMAS ORDWAY, *City Clerk.***Common Council:****WARD 1.**

William Conihe, '47,
 James C. Crombie, '47,
 Jesse Huse, '47,
 Gerry Wilson.

WARD 2.

Otis L. Allen, '47,
 William H. Flagg,
 John Nesmith, '39, '40, '42,
 Hannibal Powers, '47.

WARD 3.

Alfred Gilman, '43,
 Thomas Hopkinson, '38, '39, *President*,
 Ransom Reed,
 Nathaniel Critchett, '41, '42.

WARD 4.

John Avery,
 Otis Allen, '43,
 Abiel Rolfe,
 Horace Howard, '36, '38.

WARD 5.

Ignatius Tyler, '47,
 Elihu Gates, '47,
 Edward C. Johnson, '47,
 Charles M. Short, '46, '47.

WARD 6.

Thomas Wentworth, '47,
 Isaac N. Parker, '47,
 Jeremiah M. Currier,
 Horace Parmenter.

JOHN G. LOCKE, *Clerk.***1849.****Mayor:**

JOSIAH B. FRENCH, '36, '42.

Aldermen:

James B. Francis,
 Cyril French, '36, *'41, *'42, *'43,
 James H. B. Ayer,
 Daniel D. Crombie,

Daniel Carter,
 George Brownell, '36, '37, *'38,
 Artemas L. Brooks,
 Joseph Bedlow, *'40.

THOMAS ORDWAY, *City Clerk.***Common Council:****WARD 1.**

Jesse Huse, '47, '48, resigned Feb.,
 William A. Richardson, elected Mar.,
 Gerry Wilson, '48,
 John W. Smith,
 Alfred S. Saunders.

WARD 2.

William H. Flagg, '48,
 Ivers Taylor,
 Isaac S. Morse, resigned,
 Ambrose Lawrence.

WARD 3.

Alfred Gilman, '43, '48,
 Elisha Davis,
 James Dinsmoor,
 Andrew C. Wheelock.

WARD 4.

Nathaniel B. Favor,
 Caleb Crosby,
 Ezekiel Wright,
 Waldo A. Fisher.

WARD 5.

Maynard Bragg,
 Joshua Decatur,
 Abram T. Melvin,
 W. W. Morse.

WARD 6.

William Lamson, Jr.,
 Jeremiah M. Currier, '48,
 George S. Wright,
 John Aiken, *'37, *'41, *President.*

GEORGE A. BUTTERFIELD, *Clerk.*

1850.**Mayor:****JOSIAH B. FRENCH**, '36, '42, †'49.**Aldermen:**James H. B. Ayer, *'49,
Joseph Bedlow, *'40, *'49,
Daniel D. Crombie, *'49,
James B. Francis, *'49,Philip Hardy,
John Mixer, '36, '38,
Josiah G. Peabody,
James Townsend, '42.**THOMAS ORDWAY**, *City Clerk*.**Common Council:****WARD 1.**John W. Smith, '49,
Daniel R. Kimball,
James Watson,
Jonathan Smothers.**WARD 2.**Ivers Taylor, '49, *President*,
George Gardner,
Samuel Lawrence, 2d,
Samuel J. Varney.**WARD 3.**Jonathan Page,
John Tripp,
Fordyce Coburn,
Joshua Merrill.**GEO. A. BUTTERFIELD**, *Clerk*, res'd May.**WARD 4.**Abner W. Buttrick, '40, '44, '45,
Caleb Crosby, '49,
Benjamin Goddard,
Nathaniel B. Favor, '49.**WARD 5.**George P. Elliot,
William Fiske, '37, '38, '41,
George W. Worthen,
Maynard Bragg, '49.**WARD 6.**Albert Mallard,
Stephen P. Sargent,
George S. Wright, '49,
Wm. Lamson, Jr., '49, res'd May.**WM. LAMSON, JR.**, elected May.**1851.****Mayor:****JAMES H. B. AYER**, *'49, *'50.**Aldermen:**William Fiske, '37, '38, '41, '50,
Ambrose Lawrence, '49,
James Townsend, '42, *'50,
Philip Hardy, *'50,William North, '37,
Abiel Rolfe, '48,
Lucius A. Cutler,
Joshua Converse, '40.**THOMAS ORDWAY**, *City Clerk*.**Common Council:****WARD 1.**James Watson, '50,
Jonathan Smothers, '50,
Charles B. Coburn, '44,
Stephen Moar.**WARD 2.**Linus Child, *'47,
George Gardner, '50, *President*,
Samuel J. Varney, '50,
Zachariah B. Caverly.**WARD 3.**Fordyce Coburn, '50,
William Twichell,
Darius C. Brown,
Benjamin C. Sargeant.**WARD 4.**Benjamin Goddard, '50,
Richard Dennis,
Holland Streeter,
Solomon D. Emerson.**WARD 5.**George P. Elliot, '50,
Edward Fifield,
John N. Ford,
Theodore H. Sweetser.**WARD 6.**George W. Worthen, '50,
George W. Jones, died Sept.,
Stephen P. Sargent, '50,
Albert Mallard, '50.**WILLIAM LAMSON, JR.**, *Clerk*.

1852.**Mayor:**

ELISHA HUNTINGTON, †'37, †'38, †'39, †'40, †'41, †'44, †'45, *'47.

Aldermen:

Joseph Bedlow, *'40, *'49, *'50,
 Joseph M. Bullens,
 Samuel Burbank, '40, '41,
 Joseph B. V. Coburn,

Wm. Fiske, '37, '38, '41, '50, *'51,
 William North, '37, *'51,
 Alpha Stevens,
 Samuel J. Varney, '50, '51.

THOMAS ORDWAY, *City Clerk.***Common Council:****WARD 1.**

Rufus Rogers,
 John C. Smith,
 Jeremiah Clark,
 Paul Hill.

WARD 2.

Paul Perkins,
 Milton Bonney,
 William Hovey,
 Zachariah B. Caverly, '51.

WARD 3.

Darius C. Brown, '51,
 William Twichell, '51,
 Benjamin C. Sargeant, '51, *President*,
 Michael B. Caswell.

WARD 4.

Holland Streeter, '51,
 Elbridge Livingston,
 Abram French,
 Willard Minot.

WARD 5.

Edward Fifield, '51,
 Phineas Whiting, '41,
 George W. Patterson,
 Jonathan Kendall, '42, '44.

WARD 6.

Leonard W. Jaquith,
 Seth Pooler,
 Caleb G. Weaver,
 William C. Parker.

WILLIAM LAMSON, JR., *Clerk.***1853.****Mayor:**

SEWALL G. MACK, '43, '44, *'47.

Aldermen:

Elisha Huntington, †'37, †'38, †'39,
 †'40, †'41, †'44, †'45, *'47, †'52,
 Samuel K. Hutchinson,
 Stephen Mansur, '36, '39, *'40, *'47,
 Joseph B. V. Coburn, *'52,

Ira Spalding, '42, '43,
 Joseph M. Bullens, *'52,
 Alpha Stevens, *'52,
 Joseph White.

THOMAS ORDWAY, *City Clerk.***Common Council:****WARD 1.**

Rufus Rogers, '52,
 John C. Smith, '52,
 Marcus A. Thomas,
 James Cook, '36.

WARD 2.

Paul Perkins, '52,
 Milton Bonney, '52,
 George G. Bumpus,
 George W. Stanley.

WARD 3.

Michael B. Caswell, '52,
 Calvin Philbrick,
 Leonard Brown,
 Henry H. Wilder.

WARD 4.

Abram French, '52,
 Henry C. Howe,
 Joseph S. Grush,
 Samuel K. Pickering.

WARD 5.

George W. Patterson, '52,
 Wm. A. Richardson, '49, *Presid't*,
 Patrick Conlan,
 Jonathan Bowers.

WARD 6.

Caleb G. Weaver, '52,
 William C. Parker, '52,
 George F. Woods,
 C. F. Blanchard.

WILLIAM LAMSON, JR., *Clerk.*

1854.**Mayor:****SEWALL G. MACK**, '43, '44, *'47, †'53.**Aldermen:**

Elisha Huntington, †'37, †'38, †'39, †'40,
 †'41, †'44, †'45, *'47, †'52, *'53,
 J. B. V. Coburn, *'52, *'53, res'd Jan.,
 Samuel K. Hutchinson, *'53,
 Ira Spalding, '42, '43, *'53,

Joseph White, *'53,
 Horatio Fletcher, '47,
 C. F. Blanchard, '53,
 Charles Sperry.

WILLIAM LAMSON, JR., *City Clerk.***Common Council:****WARD 1.**

John C. Smith, '52, '53,
 Paul Hill, '52,
 Marcus A. Thomas, '53,
 Thomas Lennon.

WARD 2.

George W. Stanley, '53,
 William H. Gage,
 Amos A. Taylor,
 William H. Bradley.

WARD 3.

Calvin Philbrick, '53,
 Leonard Brown, '53, declined,
 Darius C. Brown, '51, '52, elected,
 Henry H. Wilder, '53,
 Peter O. C. Frawley.

WARD 4.

Henry C. Howe, '53,
 Joseph S. Grush, '53,
 Samuel K. Pickering, '53,
 Hubbard Wilson.

WARD 5.

William A. Richardson, '49, †'53,
President,
 Jonathan Bowers, '53,
 Patrick Conlan, '53,
 John C. Woodward.

WARD 6.

George F. Woods, '53,
 Charles S. Eastman,
 Levi H. Straw,
 William P. Webster.

LEONARD BROWN, *Clerk.***1855.****Mayor:****AMBROSE LAWRENCE**, '49, '51.**Aldermen:**

Wm. Fiske, '37, '38, '41, '50, *'51, *'52,
 Artemas L. Brooks, *'49,
 Daniel Woodward,
 Lorenzo G. Howe,

Andrew T. Nute,
 Abner Frost,
 William S. Johnston,
 Shadrach R. Brackett.

WILLIAM LAMSON, JR., *City Clerk.***Common Council:****WARD 1.**

Maynard Bragg, '49, '50,
 Aaron B. Young,
 Augustus B. Roby,
 George L. Harris.

WARD 2.

William G. Morse,
 George K. Paul,
 Mark H. Cook,
 Joseph A. Patten.

WARD 3.

Alfred Gilman, '43, '48, '49, *President,*
 Daniel Hurd,
 Theodore Warren,
 Stephen K. Fielding.

WARD 4.

Joshua W. Daniels,
 John Bennett,
 Alanson Folsom,
 Francis H. Nourse.

WARD 5.

John C. Woodward, '54,
 Stephen Bartlett,
 Jonathan Johnson,
 Oliver P. Rand.

WARD 6.

Levi H. Straw, '54,
 William T. Whitten,
 Lucien P. Stacy,
 James M. Moore.

LEONARD BROWN, *Clerk.*

1856.**Mayor:**

ELISHA HUNTINGTON, †'37, †'38, †'39, †'40, †'41, †'44,
†'45, †'47, †'52, *'53, *'54.

Aldermen:

Edward Tuck,
Samuel Burbank, '40, '41, *'52,
Charles B. Coburn, '44,
William P. Webster, '54,
Hapgood Wright, '45, '46,

Charles H. Wilder, '37, '44, '45,
O. J. Conant, resigned in March,
James H. Rand,
Jonathan Johnson, elected in
June.

WILLIAM LAMSON, JR., *City Clerk.*

Common Council:**WARD 1.**

Enos O. Kingsley,
Abiel Pevey,
David M. Collins,
Marshall E. Thompson.

WARD 2.

Isaac Hinckley,
Seth Gage,
Peter Flanders, Jr.,
Leonard F. Jewell.

WARD 3.

David Rogers,
Benj. C. Sargeant, '51, †'52, *President*,
Henry H. Carroll,
Peter Powers.

WARD 4.

Francis H. Nourse, '55,
Alden B. Buttrick,
Holland Streeter, '51, '52,
James Sands.

WARD 5.

Frederick Holton,
Isaac Place,
Albert Wheeler,
Abiel Rolfe, '48, *'51.

WARD 6.

Eliphalet Hills,
Jonathan P. Folsom,
James K. Fellows, '37,
John K. Chase.

JAMES J. MAGUIRE, *Clerk.*

1857.**Mayor:**

STEPHEN MANSUR, '36, '39, *'40, *'47, *'53.

Aldermen:

Andrew T. Nute, *'55,
John C. Woodward, '54, '55,
Jonathan Smothers, '50, '51,
Samuel W. Stickney,

John B. Tuttle,
Francis H. Nourse, '55, '56,
Jonathan Johnson, '55, *'56,
John Nesmith, '39, '40, '42, '48.

WILLIAM LAMSON, JR., *City Clerk.*

Common Council:**WARD 1.**

Abiel Pevey,
Stephen T. Stanley,
Charles A. Welch,
George F. Scribner.

WARD 2.

William G. Morse, '55,
William D. Vinall,
Temple Tebbetts,
James M. Howe.

WARD 3.

Benjamin C. Sargeant, '51, †'52, †'56,
David Rogers, '56,
Henry H. Carroll, '56,
Nathan Allen.

WARD 4.

Caleb Crosby, '49, '50,
John F. Howe,
John C. Jepson,
Alanson Nichols.

WARD 5.

Frederick Holton, '56, *President*,
William H. Wigginn,
William Goodale,
Charles Hubbard.

WARD 6.

Erastus Boyden,
Jonathan Kimball,
Robert J. Garrett,
William Nichols.

HENRY A. LORD, *Clerk.*

1858.**Mayor:**

ELISHA HUNTINGTON, †'37, †'38, †'39, †'40, †'41, †'44,
†'45, †'47, †'52, *'53, *'54, †'56.

Aldermen:

Sewall G. Mack, '43, '44, *'47, †'53, †'54,
Samuel W. Stickney, *'57,
Abiel Pevey, '56, '57,
Jeremiah P. Jewett, '42,

Joseph M. Dodge, '37,
Harvey Silver,
Albert Wheeler, '56,
Edwin A. Alger.

JOHN H. MCALVIN, *City Clerk.*

Common Council:**WARD 1.**

Charles Wilkins,
John M. Maynard,
John E. Webb,
William Barnard.

WARD 2.

Edward Tuck, *'56,
William P. Webster, '54, *'56,
Andrew Blood,
William F. Salmon.

WARD 3.

Benjamin C. Sargeant, '51, †'52, †'56,
'57, *President*,
Hanover Dickey,
Joseph A. Brabrook,
Benjamin S. Butterworth.

WARD 4.

Enoch P. Young,
Zephaniah Goward,
Jesse Blake,
John F. Howe, '57.

WARD 5.

Willard Dudley,
Samuel T. Manahan,
Isaac Page,
John Avery, 2d.

WARD 6.

William Nichols, '57,
Alpha B. Farr, resigned in Jan.,
Leonard Brown, '53, '54, elec'd Feb.
Erastus Boyden, '57,
James H. Rand, *'56, resign'd May,
Eben'r Burgess, elected in June.

GEORGE GARDNER, *Clerk.*

1859.**Mayor:**

JAMES COOK, '36, '53.

Aldermen:

Lorenzo G. Howe, *'55,
Samuel J. Varney, '50, '51, *'52,
Paul Hill, '52, '54,
Ambrose Lawrence, '49, '51, †'55, re-
signed in April,
Darius C. Brown, '51, '52,

John F. Howe, '57, '58,
Joshua Converse, '40, *'51, re'd Apr.
J. P. Folsom, '56, resign'd in April,
Edward Tuck, *'56, '58, elect'd May,
Sam'l T. Manahan, '58, elec'd May,
Jonathan Ladd, elected in May.

JOHN H. MCALVIN, *City Clerk.*

Common Council:**WARD 1.**

John E. Webb, '58,
Charles Wilkins, '58,
William Barnard, '58,
William D. Blanchard.

WARD 2.

W. P. Webster, '54, *'56, '58, *President*,
William F. Salmon, '58,
James M. Howe, '57,
David Nichols.

WARD 3.

George Hobson,
Asahel D. Puffer,
John Willoughby,
Benjamin S. Butterworth, '58.

WARD 4.

Caleb Crosby, '49, '50, '57,
Jesse Blake, '58,
George W. Partridge,
George W. Young.

WARD 5.

Horatio G. F. Corliss, '44, '46,
Luther B. Morse,
Josiah G. Peabody, *'50,
William Goodale, '57.

WARD 6.

Charles A. Stott,
Levi Sprague,
Ebenezer Burgess, '58,
Leonard Brown, '53, '54, '58.

GEORGE GARDNER, *Clerk.*

1860.**Mayor:**

BENJAMIN C. SARGEANT, '51, †'52, †'56, '57, †'58.

Aldermen:

Edward F. Watson, '40, '41, *'44, *'45,
 Lorenzo G. Howe, *'55, *'59,
 James Watson, '50, '51,
 William G. Morse, '55, '57,

Henry H. Wilder, '53, '54,
 Abner Frost, *'55,
 Samuel T. Manahan, '58, *'59,
 William S. Gardner.

JOHN H. McALVIN, *City Clerk.***Common Council:****WARD 1.**

Benjamin S. Ireson,
 Enoch Quimby,
 John P. Slocum,
 Amos H. Foster.

WARD 2.

Henry P. Clough,
 Alfred S. Saunders, '49,
 Wm. F. Salmon, '58, '59, *President*,
 Joseph L. Sargent.

WARD 3.

George Hobson, '59,
 Josiah B. Fielding,
 Henry P. Perkins,
 Hocum Hosford.

WARD 4.

George W. Partridge, '59,
 George W. Young, '59,
 Morrill M. Bohonan,
 Caleb Crosby, '49, '50, '57, '59.

WARD 5.

Josiah G. Peabody, *'50, '59,
 Sullivan L. Ward,
 George F. Morey,
 William H. Lamson.

WARD 6.

William Nichols, '57, '58,
 Samuel T. Lancaster,
 Charles A. Stott, '59,
 Foster Nowell.

GEORGE GARDNER, *Clerk.***1861.****Mayor:**

BENJAMIN C. SARGEANT, '51, †'52, †'56, '57, †'58, †'60.

Aldermen:

Samuel T. Manahan, '58, *'59, *'60,
 Jonathan P. Folsom, '56, *'59,
 James Watson, '50, '51, *'60,
 William G. Morse, '55, '57, *'60,
 Hocum Hosford, '60,

Aldis L. Waite,
 David Whitney, declined acceptance,
 Sager Ashworth, elected in May,
 William S. Gardner, *'60.

JOHN H. McALVIN, *City Clerk.***Common Council:****WARD 1.**

Frank E. Jewett,
 M. Gilbert Perkins,
 Jacob Baron,
 William D. Blanchard, '59.

WARD 2.

Alfred S. Saunders, '49, '60,
 Joseph L. Sargent, '60,
 Henry P. Clough, '60,
 Henry S. Orange.

WARD 3.

William L. North, *President*,
 George W. Norris,
 Henry P. Perkins, '60,
 James G. Morrison.

WARD 4.

Joseph Cater,
 Joseph B. Keyes,
 Morrill M. Bohonan, '60,
 Abel M. Ayer.

WARD 5.

Sullivan L. Ward, '60,
 Samuel Beck,
 William H. Parker,
 George F. Morey, '60.

WARD 6.

Samuel T. Lancaster, '60,
 Foster Nowell, '60,
 Elon A. Sanborn,
 George E. Dana.

GEORGE GARDNER, *Clerk.*

1862.**Mayor:****HOCUM HOSFORD, '60, *'61.****Aldermen:**

Mertoun C. Bryant,
 Edwin A. Alger, *'58,
 James B. Francis, *'49, *'50,
 William A. Burke,

Isaac F. Scripture,
 Aldis L. Waite, *'61,
 Albert Wheeler, '56, *'58,
 Jona. P. Folsom, '56, *'59, *'61.

JOHN H. McALVIN, City Clerk.**Common Council:****WARD 1.**

Amos D. Wright,
 Frank E. Jewett, '61,
 Horatio G. Burgess,
 Charles F. Hard.

WARD 2.

Benedict O. Carpenter,
 William T. McNeill,
 Lorenzo G. Howe, *'55, *'58, *'60,
 Henry S. Orange, '61.

WARD 3.

George W. Norris, '61,
 Edmund D. Fletcher,
 Everett W. French,
 John Quinn.

WARD 4.

Joseph B. Keyes, '61,
 George Runels,
 John Pettingell,
 Hubbard Willson, '54.

WARD 5.

Rollin C. Downs,
 Albert Mallard, '50, '51,
 Edward Fifield, '51, '52,
 Cleveland J. Cheney.

WARD 6.

Geo. F. Richardson, *President*,
 Albion J. Dudley,
 Elon A. Sanborn, '61,
 Frederick Frye.

GEORGE GARDNER, Clerk.**1863.****Mayor:****HOCUM HOSFORD, '60, *'61, †'62.****Aldermen:**

James B. Francis, *'49, *'50, *'62,
 Edwin A. Alger, *'58, *'62,
 Abiel Pevey, '56, '57, *'58,
 William A. Burke, *'62,

Isaac F. Scripture, *'62,
 Otis Allen, '43, '48,
 Albert Wheeler, '56, *'58, *'62,
 William Nichols, '57, '58, '60.

JOHN H. McALVIN, City Clerk.**Common Council:****WARD 1.**

Charles F. Hard, '62,
 Amos D. Wright, '62,
 John Cosgrove,
 William A. Wright.

WARD 2.

George F. Sawtell,
 Henry S. Orange, '61, '62,
 Hugh McEvoy,
 Nathaniel Stearns.

WARD 3.

Everett W. French, '62,
 Fordyce Coburn, '50, '51,
 Edmund D. Fletcher, '62,
 John Quinn, '62.

WARD 4.

Atwell F. Wright,
 Josiah Gates,
 William Stafford,
 John McCann.

WARD 5.

James C. Ayer,
 Charles W. Saunders,
 Cyrus H. Latham,
 John E. Downs.

WARD 6.

Geo. F. Richardson, †'62, *Pres.*,
 Albion J. Dudley, '62,
 Benedict O. Carpenter, '62,
 Frederick Frye, '62.

GEORGE GARDNER, Clerk.

1864.**Mayor:****HOCUM HOSFORD**, '60, *'61, †'62, †'63.**Aldermen:**

William S. Southworth,
James B. Francis, *'49, *'50, *'62, *'63,
Dana B. Gove,
William T. McNeill, '62,

George W. Norris, '61, '62,
George Runels, '62,
Cyrus H. Latham, '63,
George F. Richardson, †'62, †'63.

JOHN H. MCALVIN, *City Clerk*.**Common Council:****WARD 1.**

Alden B. Watson,
Lewis L. Perrin,
Frederick S. Tukey,
John Cosgrove, '63.

WARD 2.

George Ripley, *President*,
Andrew F. Jewett,
Artemas S. Young,
Hoyt W. Hilton.

WARD 3.

Samuel N. Wood,
Charles W. Dodge,
Joseph S. Pollard,
James G. Morrison, '61.

WARD 4.

Atwell F. Wright, '63,
Daniel Churchill,
William W. Sherman,
Francis Jewett.

WARD 5.

John E. Downs, '63,
Thos. G. Gerrish, res'd June 14,
Charles Hubbard, '57,
Cleveland J. Cheney, '62.

WARD 6.

Levi Sprague, '59,
Tobias L. P. Lamson,
Addison Putnam,
Albion J. Dudley, '62, '63.

GEORGE GARDNER, *Clerk*.**1865.****Mayor:****JOSIAH G. PEABODY**, *'50, '59, '60.**Aldermen:**

Ew'd F. Watson, '40, '41, *'44, *'45, *'60,
George W. Norris, '61, '62, *'64,
Dana B. Gove, *'64,
William T. McNeill, '62, *'64,

Henry H. Wilder, '53, '54, *'60,
Josiah Gates, '63,
Cyrus H. Latham, '63, *'64,
William Brown, '45, '46.

JOHN H. MCALVIN, *City Clerk*.**Common Council:****WARD 1.**

Alden B. Watson, '64,
Lewis L. Perrin, '64,
George N. Osgood,
John R. Southwick, '47.

WARD 2.

George Ripley, †'64, *President*,
Andrew F. Jewett, '64,
Julian V. Keyes,
Chester W. Rugg.

WARD 3.

Joseph S. Pollard, '64,
Charles W. Dodge, '64,
Edward C. Rice,
Frederick T. North.

WARD 4.

Francis Jewett, '64,
Benjamin Walker,
Benjamin L. Googins,
John Pearson.

WARD 5.

Charles Hubbard, '57, '64,
James Kent,
Simeon D. Osterhoudt,
James Foster.

WARD 6.

Tobias L. P. Lamson, '64,
Luke C. Dodge,
Gustavus A. Gerry,
James M. Moore, '55.

GEORGE GARDNER, *Clerk*.

1866.**Mayor:**

JOSIAH G. PEABODY, *'50, '59, '60, †'65.

Aldermen:

Samuel A. Brown,
Albert B. Plimpton,
John R. Southwick, '47, '65,
Joseph L. Sargent, '60, '61,

Charles W. Dodge, '64, '65,
Josiah Gates, '63, *'65,
Henry M. Hooke,
Albion J. Dudley, '62, '63, '64.

JOHN H. McALVIN, *City Clerk.*

Common Council:**WARD 1.**

William A. Hodge,
William A. Wright, '63,
Jacob Baron, '61,
Rollin C. Downs, '62.

WARD 2.

Andrew F. Jewett, '64, '65,
George H. Whitmore,
Julian V. Keyes, '65,
Chester W. Rugg, '65.

WARD 3.

Edward C. Rice, '65,
Frederick T. North, '65,
James N. Pinkham,
Oliver W. Smith.

WARD 4.

Benjamin L. Googins, '65,
Alfred Scott,
Thomas F. Burgess,
Benjamin Walker, '65.

WARD 5.

Robert H. Butcher,
John T. Lee,
George L. Huntoon,
Jonathan Johnson, '55, *'56, *'57.

WARD 6.

Gustavus A. Gerry, '65, *President*,
Luke C. Dodge, '65,
Charles A. Kimball,
Alfred H. Chase.

GEORGE GARDNER, *Clerk.*

1867.**Mayor:**

GEORGE F. RICHARDSON, †'62, †'63, *'64.

Aldermen:

Charles B. Coburn, '44, '51, *'56,
Hocum Hosford, 60, *'61, †'62, †'63, †'64,
John R. Southwick, '47, '65, *'66,
Joseph L. Sargent, 60, '61, *'66,
Edward C. Rice, '65, '66,

Abner W. Buttrick, '40, '44, '45, '50;
died June 29, '67.
Wm. E. Livingston, el. Sept. 9, '67.
Wm. H. Parker, '61,
Albion J. Dudley, '62, '63, '64, *'66.

JOHN H. McALVIN, *City Clerk.*

Common Council:**WARD 1.**

John Shepard,
Calvin Sawtell,
Foster Wilson,
M. Gilbert Perkins, '61.

WARD 2.

Gustavus A. Gerry, '65, †'66, *President*,
Ruel J. Walker,
William Dobbins,
Silas Tyler, Jr.

WARD 3.

Jona. P. Folsom, '56, *'59, *'61, *'62,
Frederick T. North, '65, '66,
Samuel D. Prescott,
Nathan M. Wright.

WARD 4.

John B. Hunt,
John Q. A. Hubbard,
Alfred Scott, '66,
Thomas F. Burgess, '66.

WARD 5.

George L. Huntoon, '66,
George S. Cheney,
James Foster, '65,
John T. Lee, '66.

WARD 6.

Alfred H. Chase, '66,
James Lawton,
John N. Peirce, Jr.,
Foster Nowell, '60, '61, resigned
May 14, '67.
Wm. Kittredge, elected Sept. 9, '67.

GEORGE GARDNER, *Clerk.*

1868.**Mayor:**

GEORGE F. RICHARDSON, †'62, †'63, *'64, †'67.

Aldermen:

Charles B. Coburn, '44, '51, *'56, *'67.
Francis Jewett, '64, '65,
John M. Pevey, resigned in July.
Charles L. Hildreth, elected in Sept.
Silas Tyler, Jr., '67.

Edward C. Rice, '65, '66, *'67,
William E. Livingston, *'67,
Frederic Frye, '62, '63,
Albion J. Dudley, '62, '63, '64, *'66,
*'67.

JOHN H. McALVIN, *City Clerk.*

Common Council:**WARD 1.**

Calvin Sawtell, '67,
John Shepard, '67,
John F. Merrill,
Frederic T. Greenhalge.

WARD 2.

Francis D. Munn,
Joseph A. Patten, '55,
Ruel J. Walker, '67,
Henry S. Orange, '61, '62, '63.

WARD 3.

George W. Badger,
Samuel D. Prescott, '67,
William Walker,
Albert A. Haggett.

WARD 4.

William H. Anderson,
John Q. A. Hubbard, '67,
Charles T. Crane,
John B. Hunt, '67.

WARD 5.

Edwin Lamson,
George S. Cheney, '67.
William Kelley,
Ethan N. Spencer.

WARD 6.

John N. Peirce, Jr., '67,
James Lawton, '67,
Francis Brown,
Alfred H. Chase, '66, '67, *President.*

GEORGE GARDNER, *Clerk.*

1869.**Mayor:**

JONATHAN P. FOLSOM, '56, *'59, *'61, *'62, '67.

Aldermen:

Francis Jewett, '64, '65, *'68,
Henry H. Wilder, '53, '54, *'60, *'65,
Charles L. Hildreth, *'68,
Cyrus H. Latham, '63, *'64, *'65.

Hapgood Wright, '45, '46, *'56,
John Q. A. Hubbard, '67, '68,
George S. Cheney, '67, '68,
Charles A. Stott, '59, '60.

JOHN H. McALVIN, *City Clerk.* Resigned March 15, 1869.

SAMUEL A. MCPHETRES, *City Clerk.* Elected March 15, 1869.

Common Council:**WARD 1.**

Frederic T. Greenhalge, '68,
John H. Durgin, Jr.,
Patrick Keyes,
Benjamin Patch.

WARD 2.

Joseph A. Patten, '55, '68,
Phineas Jones,
Francis D. Munn, '68,
Amos Sanborn.

WARD 3.

George W. Badger, '68,
Albert A. Haggett, '68,
William Walker, '68,
George E. Pinkham.

WARD 4.

William H. Anderson, '68, *Pres.*,
Simeon G. Lyford,
Henry P. Carter,
Epaphras A. Hill.

WARD 5.

William Kelley, '68,
Willard A. Brown,
William O. Fiske,
Edwin Lamson, '68.

WARD 6.

Francis Brown, '68,
Alpha B. Farr, '58,
Lucian P. Stacy, '55,
William Kittredge, '67.

GEORGE GARDNER, *Clerk.*

1870.**Mayor:****JONATHAN P. FOLSOM, '56, *'59, *'61, *'62, '67, †'69.****Aldermen:**

Edward F. Sherman,	Hapgood Wright, '45, '46, *'56, *'69.
Frank F. Battles,	John Q. A. Hubbard, '67, '68, *'69.
Charles L. Hildreth, *'68, *'69.	Addison Putnam, '64.
Amos B. French,	Charles A. Stott, '59, '60, *'69.

SAMUEL A. MCPHETRES, City Clerk.**Common Council:**

WARD 1.	WARD 4.
John H. Durgin, Jr., '69.	Epaphras A. Hill, '69.
Benjamin Patch, '69.	Henry P. Carter, '69.
Patrick Keyes, '69.	Simeon G. Lyford, '69.
Samuel G. Ladd.	Michael Corbett.
WARD 2.	WARD 5.
Phineas Jones, '69.	William O. Fiske, '69.
John L. Moulton,	Willard A. Brown, '69.
Patrick Cummiskey,	James D. Hartwell,
David G. Skillings,	Jeremiah Crowley.
WARD 3.	WARD 6.
Albert A. Haggett, '68, '69, <i>President</i> .	Alpha B. Farr, '58, '69.
Henry P. Perkins, '60, '61.	William Kittredge, '67, '69.
Hocum Hosford, '60, *'61, †'62, †'63,	Lucian P. Stacy, '55, '69.
†'64, *'67, declined.	John Stott.
Matthew Donovan,	
John L. Meadowcroft, elected Jan. 24.	

GEORGE GARDNER, Clerk.**1871.****Mayor:****EDWARD F. SHERMAN, *'70.****Aldermen:**

Frank F. Battles, *'70,	Albert A. Haggett, '68, '69, †'70,
William F. Salmon, '58, '59, †'60,	Henry C. Howe, '53, '54,
John W. Smith, '49, '50,	Frederick Ayer,
Amos B. French, *'70,	Addison Putnam, '64, *'70.

SAMUEL A. MCPHETRES, City Clerk.**Common Council:**

WARD 1.	WARD 4.
John H. Durgin, Jr., '69, '70,	Benj. Walker, '65, '66,
Samuel G. Ladd, '70,	Michael Corbett, '70,
Francis N. J. Haviland,	Francis H. Chandler,
Joel Knapp.	Charles T. Goddard.
WARD 2.	WARD 5.
William Dobbins, '67,	Jeremiah Crowley, '70,
John L. Moulton, '70,	Crawford Burnham,
Patrick Cummiskey, '70,	Henry C. Church,
Amos A. Blanchard.	Patrick Lynch.
WARD 3.	WARD 6.
Henry P. Perkins, '60, '61, '70, <i>Pres.</i>	Leonard Brown, '53, '54, '58, '59,
John L. Meadowcroft, '70,	John Stott, '70,
Horace Ela,	Abel T. Atherton,
Julius C. Jockow.	Nathaniel C. Sanborn.

GEORGE GARDNER, Clerk.

1872.**Mayor:****JOSIAH G. PEABODY, *'50, '59, '60, †'65, †'66.****Aldermen:**

Henry C. Howe, '53, '54, *'71,	Frederick T. North, '65, '66, '67,
Alexander G. Cumnock,	Benj. Walker, '65, '66, '71,
Benjamin Patch, '69, '70,	William Kelley, '68, '69,
Gustavus A. Gerry, '65, †'66, †'67,	Alpha B. Farr, '58, '69, '70.

SAMUEL A. MCPHETRES, City Clerk.**Common Council:**

WARD 1.
John E. Webb, '58, '59,
Alonzo F. Caswell,
Southwell Farrington,
True P. Jordan.

WARD 2.
Leonard Brown, '53, '54, '58, '59, '71,
Amos A. Blanchard, '71,
Joseph S. Brown,
Earl A. Thissell.

WARD 3.
Henry P. Perkins, '60, '61, '70, †'71,
Horace Ela, '71, [Pres.
Julius C. Jockow, '71,
Charles F. Tilton.

WARD 4.
Nathaniel P. Favor,
Nathan W. Frye,
Henry A. Lord,
Alonzo L. Russell.

WARD 5.
Crawford Burnham, '71,
Charles F. Belden,
Luther J. Eames,
William Shepard.

WARD 6.
Abel T. Atherton, '71,
Nathaniel C. Sanborn, '71,
Samuel M. Chase,
Julian Talbot.

GEORGE GARDNER, Clerk.**1873.****Mayor:****FRANCIS JEWETT, '64, '65, *'68, *'69.****Aldermen:**

Jonathan P. Folsom, '56, *'59, *'61,	Charles A. F. Swan, elected Jan. 14,
*'62, '67, †'69, †'70,	Jacob H. Sawyer,
George Runels, '62, *'64,	Jeremiah Crowley, '70, '71,
Edward Tuck, *'56, '58, *'59, declin'd,	Alpha B. Farr, '58, '69, '70, *'72,
Isaac Farrington, '46, '47, declined,	George Stevens.
William Dobbins, '67, '71, elec. Jan. 14,	

SAMUEL A. MCPHETRES, City Clerk.**Common Council:**

WARD 1.
John E. Webb, '58, '59, '72,
Alonzo F. Caswell, '72,
Frank Brady,
Stephen J. Smiley,

WARD 2.
Joseph S. Brown, '72,
Earl A. Thissell, '72,
Daniel Stickney,
Edward P. Woods.

WARD 3. [Pres.
Albert A. Haggett, '68, '69, †'70, *'71,
Charles F. Tilton, '72, resig'd Mar. 1,
William Bass,
James Owens,
James A. Loughlin, elected April 8.

WARD 4.
Atwell F. Wright, '63, '64,
Nathaniel P. Favor, '72,
Nathan W. Frye, '72,
Henry A. Lord, '72.

WARD 5.
Robert H. Butcher, '66,
Charles F. Belden, '72,
Jared P. Maxfield,
George Smith.

WARD 6.
Nathaniel C. Sanborn, '71, '72,
Samuel M. Chase, '72,
George W. S. Hurd,
Artemas S. Tyler.

GEORGE GARDNER, Clerk.

1874.**Mayor:**

FRANCIS JEWETT, '64, '65, *'68, *'69, †'73.

Aldermen:

Jeremiah Crowley, '70, '71, *'73,
 Benj. Walker, '65, '66, '71, *'72,
 Alonzo F. Caswell, '72, '73,
 Joseph S. Brown, '72, '73,

Jonathan Kendall, '42, '44, '52,
 George L. Huntoon, '66, '67,
 Nathaniel C. Sanborn, '71, '72, '73,
 George Stevens, *'73.

SAMUEL A. McPHETRES, *City Clerk.***Common Council:****WARD 1.**

Charles A. Welch, '57,
 Frank Brady, '73,
 Stephen J. Smiley, '73,
 Charles H. Harvey.

WARD 2.

Daniel Stickney, '73,
 Edward P. Woods, '73,
 Charles J. Eastman,
 Edward E. Reed.

WARD 3.

Julius C. Jockow, '71, '72,
 James Owens, '73,
 James A. Loughlin, '73,
 George W. Tilton.

WARD 4.

Charles T. Goddard, '71,
 Nathan W. Frye, '72, '73, *President*,
 Jacob H. Sawyer, *'73,
 Julian A. Richardson.

WARD 5.

Jared P. Maxfield, '73,
 John B. Lyford,
 Samuel P. Marin,
 John Scott.

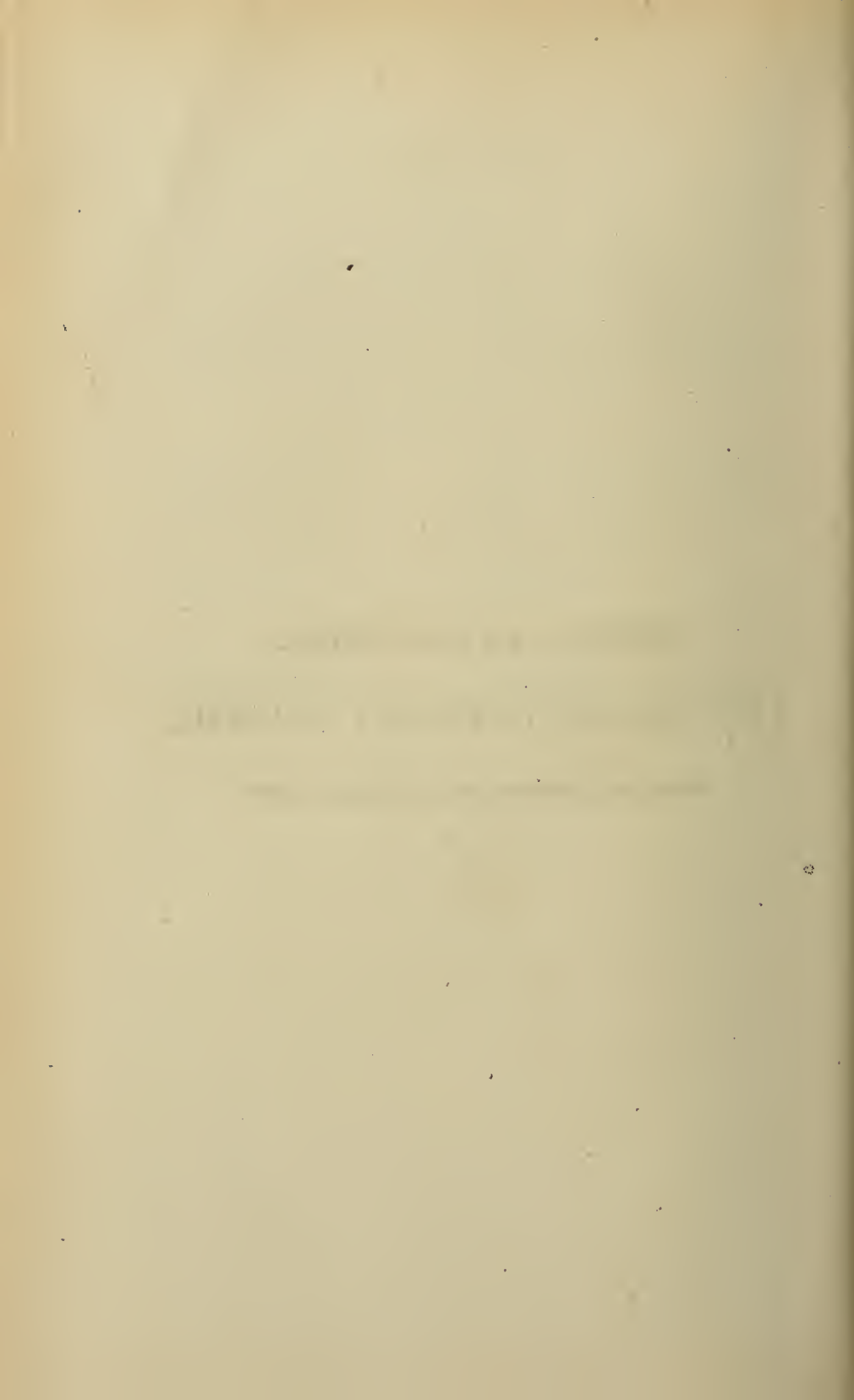
WARD 6.

George W. S. Hurd, '73,
 Joel A. Abbott,
 Thomas Carolin,
 Jason Fuller.

GEORGE GARDNER, *Clerk.*

SPECIAL AND GENERAL
LAWS RELATING TO THE CITY OF LOWELL,

PASSED OR ACCEPTED SINCE OCTOBER 28, 1863.



AN ACT

IN RELATION TO STATIONARY ENGINES.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows :

SECTION 1. No stationary engine, propelled by steam or other motive-power, shall be hereafter erected or put up for use in any city or town within five hundred feet of any dwelling-house or public building, unless a license therefor shall have been first granted in the manner provided in chapter eighty-eight of the General Statutes, in respect to licenses of steam engines, furnaces and boilers; and such license shall be applied for, granted and recorded in manner as therein provided:

SECTION 2. Any stationary engine hereafter erected, without such license, shall be deemed a common nuisance, and the Mayor and Aldermen, or Selectmen, shall have like authority to remove the same, as is given to them by section forty of said chapter.

SECTION 3. This act shall not be in force in any city or town until it has been adopted at a legal meeting of the City Council of the city, or of the inhabitants of the town called for that purpose.

SECTION 4. This act shall take effect upon its passage.

Approved March 20, 1862.

NOTE. The foregoing act was accepted for the City of Lowell, by a resolution of the City Council, passed April 10, 1866.

AN ACT

IN ADDITION TO AN ACT FOR SUPPLYING THE CITY OF LOWELL
WITH PURE WATER.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows :

SECTION 1. The commissioners authorized by the fifth section of the four hundred and thirty-fifth chapter of the acts of the year eighteen hundred and fifty-five, shall not exceed three in number, and shall hold their offices for three years, unless the work contemplated in said act shall be sooner completed. Said commissioners shall, during their continuance in office, execute, perform, superintend and direct the execution and performance of all works, matters and things mentioned in said act, and in all other acts that may be passed relative to the same subject, and they shall obey all ordinances, rules and regulations, in the execution of their said trust, as the City Council of Lowell may from time to time ordain and establish, not inconsistent with the provisions of said act, and shall once in six months, and whenever required by the City Council, make and present in writing, a particular report and statement of all their acts and proceedings, and of the condition and progress of the works aforesaid. A majority of said commissioners shall be a quorum for the exercise of the powers and the performance of the duties of the said office; they may be removed by a concurrent vote of two-thirds of each branch of the City Council, after having an opportunity to be heard in their defence; and a vacancy occasioned by death, resignation or removal, shall be filled in manner aforesaid, by the appointment of another commissioner, who shall hold his said office for the residue of the term of three years.

SECTION 2. This act shall take effect upon its passage.

Approved April 30, 1866.

AN ACT

CONCERNING SHADE AND ORNAMENTAL TREES STANDING IN
HIGHWAYS AND STREETS.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows :

SECTION 1. No person who has by law a right to cut down or remove any ornamental or shade trees standing in any highway, town way or street, shall exercise such right without first giving notice of his intention to one of the Selectmen of the town or Mayor of the city in which the tree stands ; and, if the Selectmen of the town or Mayor and Aldermen of the city desire to retain the tree, they shall give notice thereof to such person within ten days after his notice to them ; and in that case, the same course shall be taken and the same rules apply as to the assessment, appeal and final determination and payment of the damage such person may suffer by the retaining of said tree, as in the case of damage done by an alteration in such highway, town or street.

SECTION 2. If any such person shall cut down, remove or injure such tree without first giving the notice required in the foregoing section, or in violation of any of the provisions thereof, or of the rights of the city or town acquired thereunder to maintain the same, he shall suffer the penalty provided for the injury or destroying of ornamental or shade trees in the seventh section of the forty-sixth chapter of the General Statutes, and the penalty in such case shall accrue to the town or city.

SECTION 3. This act shall not be in force in any town or city until it shall be accepted by a majority of the legal voters in such town at a meeting legally called therefor, or by the City Council.

SECTION 4. This act shall take effect upon its passage.

Approved May 16, 1867.

NOTE. The foregoing act was accepted for the City of Lowell, by a resolution of the City Council, passed May 28, 1867. .

AN ACT

CONCERNING THE APPOINTMENT OF POLICE OFFICERS IN CITIES.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows :

SECTION 1. The Mayor and Aldermen of the several cities may at any time appoint police officers, with all or any of the powers of constables, except the power of serving and executing civil processes; who shall hold their offices during the pleasure of the Mayor and Aldermen.

SECTION 2. This act shall take effect upon its passage.

Approved May 27, 1867.

AN ACT

TO AMEND AN ACT ENTITLED AN ACT TO ESTABLISH A FIRE
DEPARTMENT IN THE TOWN OF LOWELL.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows :

SECTION 1. The chief engineer and the assistant engineers of the fire department in the city of Lowell may be removed at any time by the Mayor and Aldermen.

SECTION 2. This act shall take effect upon its passage.

Approved March 23, 1868.

AN ACT

IN ADDITION TO "AN ACT FOR SUPPLYING THE CITY OF LOWELL
WITH WATER."

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows :

SECTION 1. The city of Lowell is hereby authorized to take, hold and convey to, into and through the said city from Beaver Brook, so called, in the town of Dracut, Long Pond, in Dracut, and Tyng's Pond, in Dracut and Tyngsborough, and the waters which flow into and from the same, sufficient water for the use of said city, and the inhabitants thereof, for the extinguishment of fires, creating steam, domestic and other purposes ; and may also take and hold, by purchase or otherwise, any lands or real estate necessary for laying and maintaining aqueducts or pipes for conducting, discharging, disposing of and distributing water, constructing and maintaining reservoirs, dams, and such other works as may be deemed necessary or proper for raising, forcing, retaining, distributing, discharging or disposing of said water ; and may take and hold any land on and around said ponds and Beaver Brook, for the purpose of raising water to such height as may be necessary for the purity and preservation of the same, and for the purpose of furnishing a supply of pure water for the said city of Lowell.

SECTION 2. The city of Lowell shall, within sixty days from the time they shall take any lands, ponds or streams of water for the purposes of this act, file in the office of the registry of deeds for the northern district of Middlesex, a description of the lands, ponds, or streams of water so taken as certain as is required in a common conveyance of lands, and a statement of the purposes for which they were taken, which description and statement shall be signed by the Mayor of said city.

SECTION 3. The said city may make, build, lay down and maintain aqueducts and pipes from any of said sources to, into, through

and about said city, and secure and maintain the same by any works suitable therefor; may connect said Tyng's Pond and Long Pond with each other; may erect and maintain dams to raise and retain the water taken; may construct and maintain reservoirs within or without said city; and may make, erect and maintain and carry on such other works as may be necessary or proper for raising the water into the same, and forcing and distributing the water through and about said city; may make and establish such public fountains and hydrants in such places as may from time to time be deemed proper, and prescribe the purposes for which the same may be used, and may change or discontinue the same; may distribute the water throughout the city, and for this purpose may lay down pipes to any house or building in said city, the owner or owners thereof having notice, and not objecting thereto; may regulate the use of said water, within and without the said city, and establish, receive and collect the prices or rents to be paid therefor; and the said city may, for the purposes aforesaid, carry and conduct and maintain any aqueducts, pipes or other works by them to be made, laid down or conducted over, under, through, or across any water-course, canal, street, bridge, railroad, highway, or other way, in such a manner as not to obstruct the travel or free use thereof; may enter upon and dig up any such road, street, or way for the purpose of laying down pipes beneath the surface thereof, and for maintaining and repairing the same, and in general may do any other acts and things necessary or convenient and proper for carrying out the purposes of this act.

SECTION 4. All pipes, aqueducts, and other works constructed or erected by said city, by virtue of this act, in, under or over any of the canals of "The Proprietors of the Locks and Canals on Merrimack River," shall be so constructed, erected and laid, as, when completed, not to obstruct the navigation in said canals, or either of them, or to interrupt or impede the flow of the water in the same.

SECTION 5. The rights, powers and authorities given to the city of Lowell by this act, shall be exercised by the said city, subject to the restrictions, duties and liabilities herein contained, in such manner and by such commissioners, officers, agents and servants as the City Council shall from time to time ordain, appoint and direct.

SECTION 6. For the purpose of defraying the expenses which may be incurred by the city of Lowell in carrying into effect the powers granted by this act, the said city of Lowell shall have authority, from time to time, to borrow such sum or sums of money, and to issue notes, scrip or certificates of debt therefor, as the City Council

of Lowell shall from time to time deem expedient, bearing interest not exceeding the rate of six per cent. per annum; and the principal shall be made payable at periods not more than twenty years from the issuing of said notes, scrip, or certificates of debt, respectively; and the City Council may sell the same or any part thereof, from time to time at public or private sale, or pledge the same for money borrowed for the purposes of this act, on such terms and conditions as the City Council shall judge proper. And the City Council of the said city is hereby authorized from time to time, to appropriate, grant and assess such sum or sums of money as shall be deemed expedient towards paying said expenses, or the principal of the money so borrowed or obtained, and the interest thereof, in the same manner as money is appropriated, granted and assessed for other city purposes.

SECTION 7. All persons and corporations who shall be damaged in their property by the taking of any lands or water, the building of reservoirs, aqueducts or water works, or the laying of pipes, or in any other way, in carrying into effect the powers hereby granted to the city of Lowell, unless the said city shall, within sixty days after request in writing made to the Mayor of said city, pay or tender to the person or corporation so damaged a reasonable compensation therefor, shall have the same remedies as are provided in the forty-third chapter of the General Statutes for persons damaged by the laying out of highways.

SECTION 8. If any person shall use any of the said water, either within or without said city, without the consent of said city, an action of tort may be maintained by said city for the recovery of the damages sustained. ✓

SECTION 9. If any person wantonly or maliciously shall divert the water from, or corrupt the water in, or destroy or injure any aqueduct, reservoir, pipe, conduit, hydrant, machine, or other works or property held, owned or used by the said city of Lowell, by the authority and for the purposes of this act, every such person or persons shall forfeit and pay to the said city three times the amount of damages that shall be assessed therefor, to be recovered by any proper action; and every such person or persons may, moreover, on indictment for, and conviction of, either of the wanton or malicious acts aforesaid, be punished by fine, not exceeding one thousand dollars, and imprisonment not exceeding one year.

SECTION 10. This act shall take effect upon its passage.

Approved June 4, 1869.

AN ACT

IN ADDITION TO "AN ACT CONCERNING JUVENILE OFFENDERS IN
THE CITY OF LOWELL."

*Be it enacted by the Senate and House of Representatives, in General
Court assembled, and by the authority of the same, as follows:*

* Whoever being lawfully committed to the House of Employment and Reformation, under the provisions of chapter two hundred and forty-seven of the acts of eighteen hundred and forty-five, escapes therefrom, shall upon conviction thereof before the court which originally committed, or before the police court of Lowell, be sentenced to be committed to said House of Employment and Reformation for a term not exceeding in length the term of the original sentence; *provided, however*, that this act shall not authorize the commitment of any person to said House, to extend beyond the period of his minority.

Approved June 9, 1869.

*

AN ACT

TO AMEND CHAPTER THREE HUNDRED AND FIFTY-ONE OF THE ACTS OF THE YEAR EIGHTEEN HUNDRED AND SIXTY-NINE, FOR SUPPLYING THE CITY OF LOWELL WITH WATER.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows:

SECTION 1. The city of Lowell, for the purposes named in the first section of chapter three hundred and fifty-one of the acts of the year eighteen hundred and sixty-nine, is hereby authorized to take water from the Merrimack River, in the town of Dracut, or said Lowell, and also to take and hold, by purchase or otherwise, land in said Dracut or Lowell, for sinking wells or making excavations, in order to obtain water by filtration or percolation, or from subterranean streams, and for the construction of such works as may be necessary therefor, and for all other purposes for which said city might take or hold land under the provisions of said act, in case the water were taken from the sources in said act authorized.

SECTION 2. Nothing in this act shall authorize the construction of any work which, when completed, shall obstruct the flow of the water of said river (not taken as herein authorized), to or from any water mill now existing in said Lowell. And in the event that under authority of this act, water shall be taken from said river at any place above the dam of The Proprietors of Locks and Canals on Merrimack River, nothing herein shall authorize the use of water so taken, as or for power for propelling or operating machinery, otherwise than as steam.

SECTION 3. In the execution of the authority hereby granted, all the proceedings, rights, powers and liabilities shall, except as herein otherwise provided, be the same, and all persons and corporations, who shall be damaged in their property thereby, shall have the same remedies provided in said act of the year eighteen hundred and sixty-nine, in case the water were taken from the sources in said act authorized.

SECTION 4. If any person wantonly or maliciously shall divert the water from, or corrupt the water in, or destroy or injure any aqueduct, reservoir, pipe, conduit, hydrant, machine, or other works and property held, owned, or used by the said city of Lowell, by the authority and for the purposes of this act, every such person or persons shall forfeit and pay to the said city three times the amount of damages that shall be assessed therefor, to be recovered by any proper action; and every such person or persons may, moreover, on indictment for, and conviction of, either of the wanton or malicious acts aforesaid, be punished by fine not exceeding one thousand dollars, and imprisonment not exceeding one year.

SECTION 5. This act shall take effect upon its passage.

Approved June 3, 1870.

AN ACT

IN RELATION TO BETTERMENTS.

[See Chapter 382 of the Acts of 1871.]

AN ACT

TO CHANGE THE TIME OF HOLDING THE ANNUAL MUNICIPAL
ELECTIONS IN CITIES.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Hereafter in the several cities, the annual elections for the choice of city and ward officers, which are now required by

law to be held on Monday, shall be held on the Tuesday next after such Monday.

SECTION 2. All acts and parts of acts inconsistent herewith are hereby repealed.

SECTION 3. This act shall take effect in those cities only which shall accept the same by vote of the City Council.

Approved March 23, 1872.

NOTE. The foregoing act was accepted for the City of Lowell by a Resolution of the City Council, passed May 28, 1872.

AN ACT

RELATING TO CONTRACTS WITH THE OFFICERS OF CITIES.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows :

SECTION 1. No member of the City Council of any city, or either branch thereof, or any officer chosen or appointed by the Mayor, City Council, or either branch thereof, or by the legal voters, shall be interested in a private capacity, either directly or indirectly in any contract or agreement for labor, or for any materials, goods, wares or merchandise furnished to such city, wherein said city is a party interested; nor shall either directly or indirectly for himself or any other person, receive any commission, discount, bonus, present or reward from the person or persons making such contract or agreement, or furnishing such materials, goods, wares and merchandise.

SECTION 2. Whoever violates the provisions of this act shall be punished by a fine of not less than fifty dollars nor more than one thousand dollars, or by fine and imprisonment not exceeding one year, at the discretion of the court.

Approved April 29, 1872.

EXTRACT FROM CHAPTER 19.—GENERAL STATUTES.

SECTION 6. If, at or after the time for the Mayor and Aldermen of a city to enter upon the discharge of their duties, it appears that the Mayor or the full number of Aldermen are not elected, such of said officers as are elected, shall issue warrants for the election of a Mayor or such Aldermen as may be necessary. If neither of said officers is elected, the President of the Common Council shall issue such warrants.

SECTION 7. If by reason of non-election there is no Mayor of a city, the chairman of the Board of Aldermen shall discharge the duties of the office until a Mayor is chosen and sworn.

SECTION 8. When it appears to the Mayor and Aldermen, that there is a vacancy either in their board, the Common Council, or any city or ward office, to be filled by popular election, they shall issue their warrant for elections to fill such vacancy at such time and place as they deem advisable.

SECTION 9. Ward officers authorized to act at elections, shall attend and perform their respective duties at the times and places appointed for elections of officers, whether of the United States, state, city or wards, and shall make and sign the regular returns of the same. If a ward officer is absent from a meeting the office may be filled *pro tempore*, by the voters present, by nomination and hand vote, if they so determine.

SECTION 10. City officers who were residents of the ward at the time of their election, shall discharge the duties of their offices notwithstanding their removal afterwards into any other ward of the city.

NOTE. The foregoing sections were adopted for the City of Lowell, by a Resolution of the City Council, passed December 24, 1872.

A N A C T

FOR THE PREVENTION OF FIRE IN CITIES AND TOWNS.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows :

SECTION 1. Cities and towns may, by ordinances and by-laws not repugnant to the laws of the Commonwealth, prescribe rules and regulations for the inspection, materials, construction, alteration and safe use of buildings and structures within their respective limits not owned or occupied by the United States or the Commonwealth, and excepting bridges, quays and wharves, for the purpose of securing the prevention of fire and the preservation of life ; and may prescribe penalties, not exceeding one hundred dollars for each and every violation of any provision of such ordinances or by-laws.

SECTION 2. Such ordinances and by-laws may be made operative upon and within the whole territory of any city or town, or upon and within any prescribed and defined district or districts of such territory.

SECTION 3. The supreme judicial court, or any justice thereof, in term time or vacation, may, by injunction or other suitable process in equity, restrain any person or corporation from constructing, altering, maintaining or using any building or structure contrary to or in violation of any lawful ordinance or by-law made under or by virtue of this act, and may order and enforce the removal or abatement as a nuisance of any building or structure constructed, altered, maintained or used in violation of such ordinance or by-law.

SECTION 4. This act shall not be in force in any city or town unless the City Council or the inhabitants of the town shall, by legal vote, decide to adopt the same ; and it shall not apply to the city of Boston.

SECTION 5. This act shall take effect upon its passage.

Approved April 23, 1872.

NOTE. The foregoing Act was adopted for the City of Lowell by a Resolution of the City Council, passed May 13, 1873.

AN ACT

TO PROVIDE FOR A SINKING FUND FOR THE PAYMENT OF THE
CITY OF LOWELL WATER LOAN BONDS.

*Be it enacted by the Senate and House of Representatives, in General
Court assembled, and by the authority of the same, as follows :*

SECTION 1. The city of Lowell may appropriate and raise by taxation, annually, such a sum of money as shall be deemed expedient by the City Council of said city, for paying the City of Lowell Water Loan Bonds, in the same manner as money is appropriated and assessed for other city purposes; and said sum so raised from year to year shall be set apart and held as a Sinking Fund, which, with the accumulated interest thereon, shall be devoted and applied solely toward the redemption and payment of said bonds. Said fund shall be invested and managed in such manner as said City Council may by ordinance provide.

SECTION 2. This act shall take effect upon its passage.

Approved March 8, 1873.

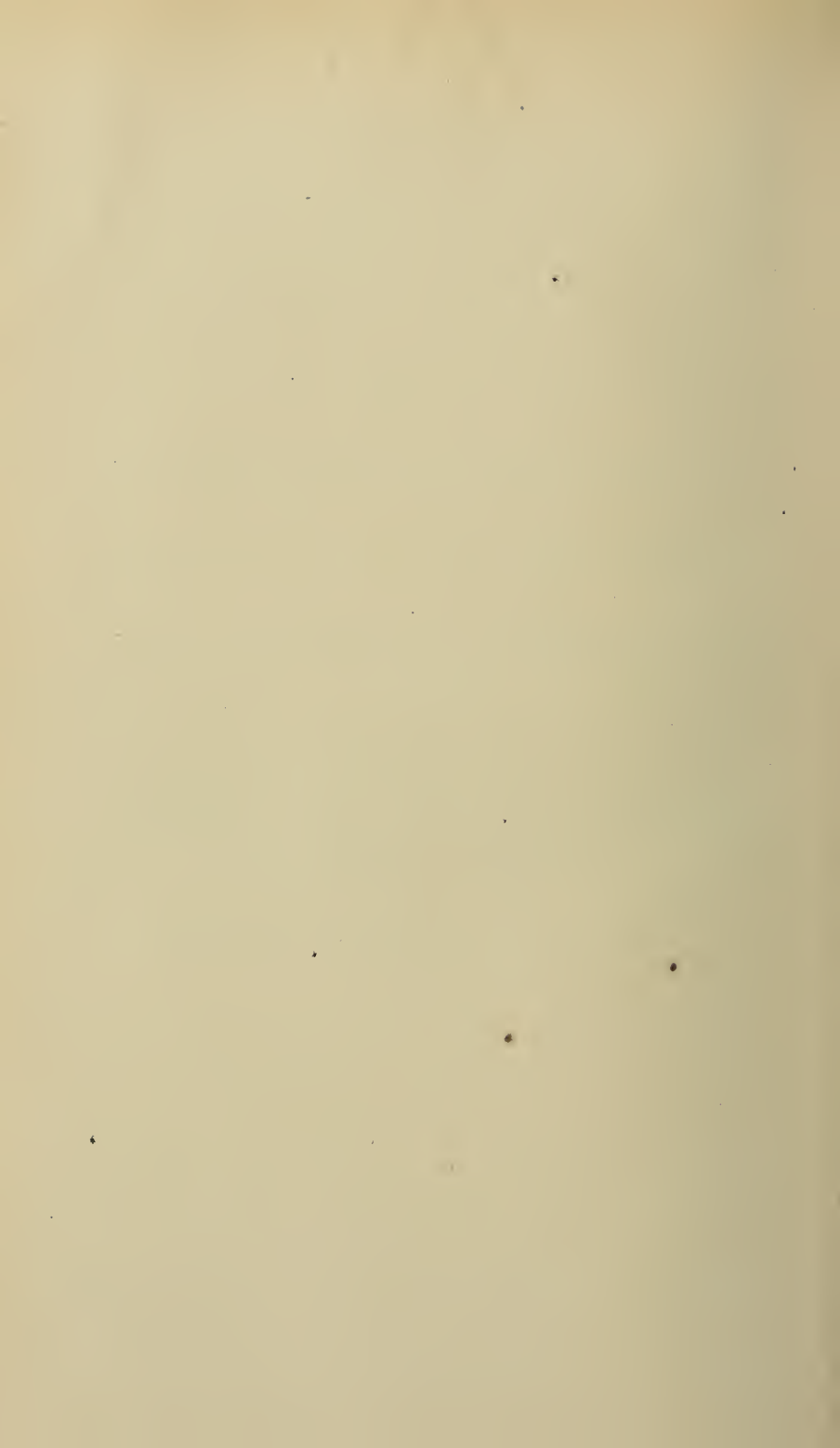
ORDINANCES

(Now in force,)

PASSED SUBSEQUENT TO THE

ORDINANCES OF THE CITY OF LOWELL,

ORDAINED OCTOBER 28, 1863.



CITY OF LOWELL.

In the year Eighteen Hundred and Sixty-Six.

AN ORDINANCE TO SECURE THE ENFORCEMENT OF SANITARY
REGULATIONS.

Be it Ordained by the City Council of the City of Lowell, as follows:

SECTION 1. A Board of Health shall be appointed annually in the month of January or February, or at any time when a vacancy may exist, consisting of the Mayor (*ex-officio*), two Aldermen, who shall be appointed by the Mayor, and three members of the Common Council, who shall be appointed by the President of that Board, with the powers and duties assigned to Boards of Health by the Statutes of the Commonwealth of Massachusetts.

SECTION 2. The Board of Health may make all regulations which they may deem necessary in regard to the removal and abatement of filth, rubbish, nuisances and causes of disease, and shall have power to require such aid from the City Marshal, Police force, and the Superintendent of Streets, as may be necessary to search out and cause the removal of such sources and causes of disease; to call upon the City Physician for advice or services in his professional capacity, or to appoint a physician to the Board; and to perform any other acts and duties which may to them seem necessary for the health of the City, provided, always, that such acts shall be in conformity to, the Statutes of the Commonwealth, and the Ordinances of the City of Lowell.

In Common Council, March 13, 1866.

Passed to be ordained.

GUSTAVUS A. GERRY, President.

In Board of Aldermen, March 13, 1866.

Passed to be ordained.

J. G. PEABODY, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Sixty-Seven.

AN ORDINANCE AMENDING CHAPTER TWENTY-TWO OF THE
ORDINANCES OF THE CITY OF LOWELL.

Be it Ordained by the City Council of the City of Lowell, as follows:

That Section Two of Chapter Twenty-Two of the Ordinances of the City of Lowell be amended by striking out in the first and second lines the words "shall appoint annually in the month of January or February," and inserting in place thereof the words "may appoint from time to time."

In Common Council, Sept. 24, 1867.

Passed to be ordained.

GUSTAVUS A. GERRY, President.

In Board of Aldermen, Sept. 24, 1867.

Passed to be ordained.

GEORGE F. RICHARDSON, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Sixty-Eight.

AN ORDINANCE AMENDING CHAPTER SIX OF THE ORDINANCES
OF THE CITY OF LOWELL.

Be it Ordained by the City Council of the City of Lowell, as follows:

SECTION 1. That Chapter Six of the Ordinances of the City be and hereby is amended by inserting between the words "Council" and "during" in the seventeenth line of the second section, the words "and of the School Committee."

In Common Council, April 14, 1868.

Passed to be ordained.

ALFRED H. CHASE, President.

In Board of Aldermen, April 14, 1868.

Passed to be ordained.

GEORGE F. RICHARDSON, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Sixty-Eight.

AN ORDINANCE AMENDING CHAPTER TWO OF THE ORDINANCES OF THE CITY OF LOWELL, AND REPEALING THE AMENDMENT TO SAID CHAPTER, ENTITLED, "AN ORDINANCE AMENDING CHAPTER TWO OF THE ORDINANCES OF THE CITY OF LOWELL."

Be it Ordained by the City Council of the City of Lowell, as follows:

SECTION 1. That Chapter Two of the Ordinances of the City of Lowell be amended by striking out the First Section of the Amendment to said Chapter, entitled "An Ordinance Amending Chapter Two of the Ordinances of the City of Lowell," and substituting therefor the following words: "The fees for the services of said Superintendent and Undertakers at the funeral of any person to be buried within the City, of the age of twelve years, and over, shall be five dollars, and if under twelve years of age, four dollars and fifty cents, which fees shall be in full for digging the grave, attending with the funeral car at the funeral, conveying and burying the corpse, and obtaining and returning the facts required by Chapter Twenty-One of the General Statutes; when, however, the Proprietors of the Lowell Cemetery shall charge more than two dollars for digging a grave within the precincts of said Cemetery, then the fees of said Superintendent and Undertaker for services at the funeral of any person buried within said Cemetery shall be increased by the amount in excess of said sum of Two Dollars charged by said Proprietors, and for services at the funeral of any person buried in any other Cemetery or burial ground during the months of December, January, February and March, the ordinary fees of said Superintendent and Undertakers shall be increased by the sum of One Dollar; provided, however, that the fees for the burial of any pauper, if over

twelve years of age, shall be three dollars, and if under that age, two dollars; provided further, that the said Superintendent and Undertakers shall collect the additional fees of twenty-five cents, for the use of the funeral car which may be used in the burial of any person within the city, and ten cents per mile for any distance that the same may be driven from and to the city. And it shall be the duty of the several Undertakers to pay over the said fees for the use of the funeral car to the Superintendent of Burials monthly, and the said Superintendent shall pay the same into the City Treasury before he shall be entitled to his salary."

In Common Council, June 9, 1868.

Passed to be ordained.

ALFRED H. CHASE, President.

In Board of Aldermen, June 9, 1868.

Passed to be ordained.

GEORGE F. RICHARDSON, Mayor,

CITY OF LOWELL.

In the year Eighteen Hundred and Sixty-Eight.

AN ORDINANCE AMENDING THE ORDINANCES OF THE CITY OF
LOWELL.

Be it Ordained by the City Council of the City of Lowell, as follows:

SECTION 1. That Section Two of Chapter Twenty of the Ordinances of the City of Lowell be amended by striking out in the first, second and third lines, the words "there shall be appointed annually in the month of January or February, and whenever a vacancy occurs by the Mayor and Aldermen," and inserting in place thereof the words "the Mayor and Aldermen shall annually, in the month of January or February, and at such other times as they deem expedient, appoint."

In Common Council, June 9, 1868.

Passed to be ordained.

A. H. CHASE, President.

In Board of Aldermen, June 9, 1868.

Passed to be ordained.

GEORGE F. RICHARDSON, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Sixty-Eight.

AN ORDINANCE ESTABLISHING THE OFFICE OF SUPERINTENDENT
OF STREET LAMPS.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. The Chief Engineer of the Fire Department shall be Superintendent of Street Lamps, and shall have the care and custody of all street lamps, lanterns, and lamp posts belonging to the city used for the purpose of lighting the streets. He shall keep the same in good condition, and lighted at such times as the Committee on Lighting Streets may direct. He shall also contract for all materials, superintend the putting up of all posts and lamp fixtures located by the Mayor and Aldermen ; shall employ suitable persons to light the street lamps which are not lighted by the Police Department, and shall keep an accurate account of the number and kind of lamps in the city, the hours they burn, the amount of materials used for lighting, and cost of the same, and all other expenses incurred in this department ; and in the month of January, annually, shall make a report to the Mayor and Aldermen of the number and kind of lights in the city, the increase, if any, during the year, and where located, the times when lighted, and also a synopsis of his doings through the preceding year.

SECTION 2. All Ordinances and parts of Ordinances inconsistent herewith are hereby repealed.

In Board of Aldermen, December 22, 1868.

Passed to be ordained.

GEORGE F. RICHARDSON, Mayor.

In Common Council, December 22, 1868.

Passed to be ordained.

ALFRED H. CHASE, President.

CITY OF LOWELL.

In the year Eighteen Hundred and Sixty-Nine.

AN ORDINANCE AMENDING SECTION SEVEN OF CHAPTER ONE OF
THE ORDINANCES OF THE CITY OF LOWELL.

Be it Ordained by the City Council of the City of Lowell, as follows :

That Section Seven, of Chapter One, of the Ordinances of the City of Lowell, be amended, by the addition of the following words: "said report to include a verification of the cash balance, as shown by said account, founded upon actual examination of all assets in the hands of the Treasurer."

In Common Council, April 27, 1869.

Passed to be ordained.

WILLIAM H. ANDERSON, President.

In Board of Aldermen, April 27, 1869.

Passed to be ordained.

JONATHAN P. FOLSOM, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Sixty-Nine.

AN ORDINANCE AMENDING THE ORDINANCES OF THE CITY OF
LOWELL.

Be it Ordained by the City Council of the City of Lowell, as follows :

That Section Four, of Chapter One, of the Ordinances of the City of Lowell, be amended, by adding the following words: "And provided, further, that when any suit is commenced in any Court in this Commonwealth in which the City of Lowell shall be a party, and in which it shall be necessary for the City Solicitor to pay money in advance to witnesses to attend said Court, such money may be so paid to the City Solicitor by the City Treasurer, upon the written order of the Mayor, countersigned by the Auditor, and approved by the Chairman of the Committee on Accounts."

In Common Council, May 11, 1869.

Passed to be ordained.

WILLIAM H. ANDERSON, President.

In Board of Aldermen, May 11, 1869.

Passed to be ordained.

JONATHAN P. FOLSOM, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Sixty-Nine.

AN ORDINANCE AMENDING CHAPTER SEVEN OF THE ORDINANCES
OF THE CITY OF LOWELL.

Be it Ordained by the City Council of the City of Lowell, as follows :

That Section Two of Chapter Seven, of the Ordinances of the City, be and hereby is amended by adding thereto the following words: "or who is trampling down or injuring the grass upon said Commons, nor shall any person engage in any games upon either of the Commons except within such limits as shall be specially designated for such purposes by the Mayor and Aldermen."

In Common Council, July 13, 1869.

Passed to be ordained.

WILLIAM H. ANDERSON, President.

In Board of Aldermen, July 13, 1869.

Passed to be ordained.

JONATHAN P. FOLSOM, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Sixty-Nine.

AN ORDINANCE IN RELATION TO WATER COMMISSIONERS AND
WATER WORKS.

Be it Ordained by the City Council of the City of Lowell, as follows:

SECTION 1. Whereas the City Council of the City of Lowell, on the 12th day of October, A. D., 1869, decided that they would introduce water into the city from Beaver Brook, so called, in the town of Dracut, in accordance with the act of the Legislature, approved June 4, A. D., 1869, entitled "An act in addition to an 'Act for supplying the City of Lowell with water,'" it is ordained and determined that water, for the purpose aforesaid, shall be introduced from said Beaver Brook.

SECTION 2. For the purpose of carrying into effect the provisions of said act and for introducing a supply of water into said city, there shall be chosen, by the City Council, by concurrent vote, three Water Commissioners who shall be known and called by the name of "THE LOWELL WATER COMMISSIONERS." Said Commissioners shall hold their offices for three years from and after the time of their election, unless the water works contemplated by said act shall be sooner completed; and in that case, until the completion of said works. Provided, however, that the City Council, by concurrent vote of two-thirds of the members elected to either Board voting in the affirmative, may remove said Commissioners, or any of them from office, for any misconduct, unfaithful performance of duty, neglect, or incapacity. In case of a vacancy in the Board of Commissioners by death, resignation or removal, such vacancy shall be filled by the appointment of another Commissioner, in the manner provided for in this section, who shall hold his said office for the residue of the said

term of three years, with all the powers and subject to all the restrictions provided in this Ordinance. Said Commissioners are authorized to select one of their number to act as Chairman or President of the Board. Two Commissioners shall be a quorum for the exercise of the powers and performance of the duties of said office.

SECTION 3. The Chairman or President of said Commissioners shall receive a salary of two thousand dollars per annum, and each of the other Commissioners a salary of one thousand dollars per annum, payable quarterly.

SECTION 4. Said Commissioners shall have authority to convey into and through said City the waters of said Beaver Brook in accordance with the provisions of said act, and shall have and exercise all the powers conferred on said City by said act, and may take by purchase, or otherwise, the waters of said brook and any water rights connected therewith, and any real estate necessary for laying aqueducts and forming reservoirs, and for any of the purposes of said act, and may also make contracts for labor and materials for the construction of said water works, which shall be valid and binding on said City, and which may be suitable and proper for facilitating, expediting and finishing the works in the most speedy, economical, advantageous, permanent and effectual manner.

SECTION 5. Whenever the Commissioners aforesaid shall take by purchase or otherwise any lands, streams of water, water rights or water sources for the purposes mentioned in said act, they shall, without unnecessary delay, make and deliver to the Mayor of the City of Lowell a certificate signed by them containing a statement of the fact of such taking, and a description of the lands or water sources so taken, as certain as is required in a common conveyance of lands, and a statement of the purposes for which they are so taken, to the end that the Mayor aforesaid may cause such description and statement, signed by him, to be filed in the office of the Registry of Deeds for the Northern District of Middlesex, as required by the second section of said act.

SECTION 6. All contracts for labor and materials in the prosecution of said work shall be in writing, and executed in triplicate, one of which triplicate shall be kept by the Commissioners, one shall be delivered to the City Clerk, and one to the contractor, and no such contract shall be executed unless good and satisfactory security for the faithful performance of the same, and also to indemnify and save the City harmless from and against all claims against said City

under Chapter one hundred and fifty of the General Statutes, by persons who may have done work or labor in the construction, erection and preparation of said works at the request of such contractor, shall be given by the contractor and approved by the Commissioners. Said Commissioners, when not otherwise authorized by the City Council, shall advertise in one or more newspapers in this city, and in such other cities and places as they may think best, for sealed proposals for all such contracts, specifying the time and place where the same shall be received; and such proposals, in order to be received and acted upon, shall set forth a specified sum or price to be paid for all such labor or materials, or for either, without condition, limitation or alteration, and shall be accompanied with a bond satisfactory to the Commissioner, conditioned for the faithful execution of the proposal if the same shall be accepted; and the contents of any proposal shall not be made known to any person not a member of the Commission until a contract shall have been made, provided, that said Commissioners may in their discretion reject any or all such proposals; and no contract shall be assigned without the written consent of said Commissioners. Nothing herein contained shall require said Commissioners to advertise for proposals for the ordinary extensions of street mains and water pipes, or repairs of the water works. Said Commissioners shall have power and authority to employ an engineer and such other agents, clerks and servants as they may deem necessary, and to agree with them for their compensation, which shall be paid out of the City Treasury.

SECTION 7. No one of said Commissioners, and no person appointed to any office or employed by virtue of this ordinance, or by the aforesaid act of the Legislature, shall be interested directly or indirectly in any bargain, contract, sale, or agreement in relation to said water works, or any matter or thing connected therewith, wherein the city is interested, without an express vote of the City Council; and any and all contracts, bargains, sales, or agreements made in violation of this section shall be utterly void as to the City.

SECTION 8. It shall be the duty of the Commissioners aforesaid to exercise all reasonable vigilance and care by personal inspection, examination and supervision, from day to day, or from time to time, as circumstances may require, of all matters and things herein committed to their charge; to see that all works, matters and things to be done, executed and performed by and through their agency and under their superintendence, by virtue of the act aforesaid and of this ordinance, shall be done, executed and performed in a substan-

tial, economical and effectual manner; that all the officers, agents, and other persons who may be employed by them in the works aforesaid, execute and discharge the duties and labors assigned to them respectively, in a diligent and faithful manner; and that all contracts and agreements made and concluded by them in the execution of the duties of their office are faithfully and properly executed and performed.

SECTION. 9. The Commissioners aforesaid shall enter or cause to be entered, in a book to be kept for that purpose, and which shall be subject to the inspection and examination of the Joint Standing Committee of the City Council on Water Works, or of any other committee appointed by the City Council for that purpose, a journal, account or record of all rules, orders, votes, appointments, resolutions, proceedings and other official acts which may from time to time be adopted by them; and the said Commissioners shall, at the beginning of each month during their continuance in office, make a report in writing to the said Joint Standing Committee of their proceedings during the month next preceding such report. And the said Joint Standing Committee shall, at the expiration of each period of three months, make a written report to the City Council upon the matters committed to them.

SECTION 10. In order to enable the City Council seasonably to raise and provide the funds necessary for defraying the costs and expenses which may from time to time be incurred in the prosecution of the work, and for carrying into full effect the purposes and objects of the act aforesaid, and of this ordinance, the Commissioners aforesaid shall from time to time seasonably make and prepare, with as much particularity as may be useful and practicable, estimates for the use of the said City Council, of such sums of money as, in their judgment, may be required; and statements of the purposes for which said sums respectively are to be appropriated and applied.

SECTION 11. It shall be the duty of the Commissioners aforesaid to investigate promptly all cases in which it appears probable that any damages may be claimed of the City by any person or corporation for any alleged injury to the body or the property, real or personal, of such person or corporation by reason of any decision, action, or operation of said Commissioners, or of others employed by them in the performance of any of the matters and things committed to their charge by the act aforesaid, and this ordinance; and to make forthwith a memorandum in writing of all the important facts and circumstances relating thereto, together with a list of the names of

all persons whose testimony concerning the particulars of such alleged injury may be deemed important by said Commissioners, which memorandum they shall file and preserve.

SECTION 12. In all suits, processes, and questions in law or equity which may be commenced, prosecuted or pending by or against the City of Lowell in any court, or before any other tribunal, for or by reason of any act, proceeding or contract of the Commissioners aforesaid, or of the City of Lowell, or for any other cause arising from the execution of the powers and authority given by the provisions of the act aforesaid and of this ordinance, the said Commissioners shall aid and assist the counsel employed in behalf of the City, by giving information of all facts within their knowledge, and furnishing any documents, testimony and evidence in their possession or control, which may be material, important or useful in establishing the rights and protecting the interests of said City.

SECTION 13. All bills on account of said water works shall be examined by said Commissioners, and if found correct shall be so certified by them, and that the same have been incurred in the construction of the water works, and the Mayor shall draw his order therefor upon the Treasurer when the same shall have been audited and approved by the Joint Standing Committee of the City Council on Water Works, or of such committee as shall be appointed by the City Council to inspect and examine the proceedings and official acts of the said Commissioners, under the provisions of Section Nine.

SECTION 14. This ordinance and all its provisions shall be subject to such revision, alteration, amendment or repeal at the discretion of the City Council of the City of Lowell as shall not be inconsistent with the provisions of the act of the Legislature aforesaid.

In Common Council, November 23, 1869.

Passed to be ordained.

WILLIAM H. ANDERSON, President.

In Board of Aldermen, November 23, 1869.

Passed to be ordained.

JONATHAN P. FOLSOM, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy.

AN ORDINANCE RELATING TO RATES OF FARE IN HACKNEY
COACHES OR OTHER CARRIAGES.*Be it Ordained by the City Council of the City of Lowell, as follows:*

SECTION 1. The fares for the conveyance of passengers in licensed Hackney Coaches, or other carriages, shall not exceed the following rates, viz: For each passenger over twelve years of age, carried from any one place within the city to any other place within the city, thirty-five cents; except that if such passenger shall, at his own request, be taken into such coach or carriage after ten o'clock at night, and before five o'clock of the following morning, at any place within the city, and is carried with due speed and diligence to any other place within the city, a fare may be charged not exceeding fifty cents; for any such conveyance of a child under twelve years of age, the fare shall not exceed fifteen cents; and for children under three years of age accompanied by a parent or guardian, no fare shall be taken or charged. For the fares aforesaid each passenger may carry with himself baggage not exceeding seventy-five pounds in weight; and for each additional fifty pounds of baggage or fractional part thereof, five cents more may be charged.

SECTION 2. If any person shall ask for or charge a fare greater than the rates named in the foregoing section for the conveyance of passengers, he shall be punished by a fine not exceeding Twenty Dollars for each offence.

SECTION 3. The Sixth Section of the Fourteenth Chapter of the Ordinances of the City, passed and ordained October 28, 1863, and the Ordinance passed and ordained April 25, 1865, are hereby repealed.

In Common Council, February 8, 1870.

Passed to be ordained.

ALBERT A. HAGGETT, President.

In Board of Aldermen, February 8, 1870.

Passed to be ordained.

JONATHAN P. FOLSOM, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy.

AN ORDINANCE IN ADDITION TO "AN ORDINANCE IN RELATION TO
WATER COMMISSIONERS AND WATER WORKS."

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. For the purpose of carrying into effect an act of the Legislature of the Commonwealth, entitled "An act to amend Chapter 351 of the acts of the year 1869 for supplying the City of Lowell with water," it is hereby ordained and determined that water shall be taken from Merrimack River at a point in Dracut above Pawtucket Falls, and therefrom conveyed in a brick conduit to settling basins near the outlet of Beaver Brook in said Dracut, and thence into and through said city in such manner as the Lowell Water Commissioners shall deem most expedient, and by the construction of such works as may be necessary therefor.

SECTION 2. The Lowell Water Commissioners shall have authority to convey into and through said city, the waters of said Merrimack River as aforesaid, in accordance with the provisions of said act, and shall have and exercise all the powers conferred on said city by said act, and in the taking of the said waters as aforesaid, shall have all the powers, privileges, and duties, and be subject to all the liabilities and restrictions given and imposed on them by the ordinance passed by the City Council of said Lowell, November 23rd, A. D., 1869, entitled "An ordinance in relation to Water Commissioners and Water Works," as fully as if herein specifically mentioned.

SECTION 3. So much of said ordinance passed November 23rd, A. D., 1869, as conflicts and is inconsistent with the provisions of this ordinance is hereby repealed.

In Common Council, July 26, 1870.

Passed to be ordained.

ALBERT A. HAGGETT, President.

In Board of Aldermen, July 26, 1870.

Passed to be ordained.

JONATHAN P. FOLSOM, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy.

AN ORDINANCE AMENDING "AN ORDINANCE IN ADDITION TO AN ORDINANCE IN RELATION TO WATER COMMISSIONERS AND WATER WORKS," PASSED JULY 26TH, A. D., 1870.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. That Section One of the "Ordinance in addition to an Ordinance in relation to Water Commissioners and Water Works," passed July 26th, A. D., 1870, be amended by inserting after the words "Merrimack River," in said section, the words "and from Filter Galleries," and by striking out after the words "therefrom conveyed," in said section, the eighteen following words, to wit: "in a brick conduit to settling basins near the outlet of Beaver Brook in said Dracut, and thence," so that the section as amended shall read as follows :

"For the purpose of carrying into effect an act of the Legislature of the Commonwealth entitled 'An Act to amend chapter 351 of the acts of the year 1869 for supplying the City of Lowell with water,' it is hereby ordained and determined that waters shall be taken from Merrimack River and from Filter Galleries, at a point in Dracut above Pawtucket Falls, and therefrom conveyed into and through said city in such manner as the Lowell Water Commissioners shall deem most expedient, and by the construction of such works as may be necessary therefor."

SECTION 2. That Section Two of said ordinance passed July 26th, A. D., 1870, be amended by inserting after the words "Merrimack River," in said section, the words "and of said Filter Galleries."

In Common Council, December 27, 1870.

Passed to be ordained.

ALBERT A. HAGGETT, President.

In Board of Aldermen, December 27, 1870.

Passed to be ordained.

JONATHAN P. FOLSOM, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy.

AN ORDINANCE RELATING TO THE LOWELL HORSE RAILROAD
COMPANY.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. The following regulations shall be observed by the Lowell Horse Railroad Company, their servants and agents :

First. Whenever snow shall fall of a sufficient depth to make sleighing, no snow plough shall be allowed to pass over the track of said Company or any part thereof; and the Company shall not at any time cause or allow snow or ice to be removed from their tracks, or any part thereof, without consent being first obtained of the Superintendent of Streets, or of the Chairman of the Committee on Streets.

Second. Said Company shall not sprinkle or place salt, brine or pickle, or any article of a decomposing nature, on any of their tracks or rails, or cause or allow the same to be done by their servants or agents without like consent.

SECTION 2. Said Company, or any individual, violating either of the foregoing Regulations, shall be punished by a fine of twenty dollars for each offence.

In Common Council, December 30, 1870.

Passed to be ordained.

ALBERT A. HAGGETT, President.

In Board of Aldermen, December 30, 1870.

Passed to be ordained.

JONATHAN P. FOLSOM, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-One.

AN ORDINANCE RELATING TO THE ELECTION OF A MESSENGER TO
THE CITY COUNCIL.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. There shall be chosen annually, by ballot, in the month of January, by concurrent vote of both branches of the City Council, a Messenger to the City Council, who shall enter upon his duties the first Monday in February, and he shall be removable at the pleasure of the City Council.

SECTION 2. All Ordinances and parts of Ordinances inconsistent herewith are hereby repealed.

In Common Council, January 10, 1871.

Passed to be ordained.

HENRY P. PERKINS, President.

In Board of Aldermen, January 10, 1871.

Passed to be ordained.

E. F. SHERMAN, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-One.

AN ORDINANCE TO REGULATE THE POSTING OF PLACARDS,
NOTICES AND BILLS.

Be it Ordained by the City Council of the City of Lowell, as follows:

SECTION 1. No person shall post up or affix in any manner, any placard, notice or bill, either written or printed, upon the fences or walls, or any part of any building in the City of Lowell, without the previous consent of the person or persons having possession of the same.

SECTION 2. No person shall post up or affix, in any manner, any placard, notice or bill, either written or printed, upon any post, curbstone or sidewalk, or upon any tree in any street, square, park or public place in the City of Lowell, or upon any wall, fence, or building, belonging to the City of Lowell, without the consent of the Mayor.

SECTION 3. Any person who violates the provisions of this Ordinance shall forfeit and pay for every violation a sum not exceeding twenty dollars.

In Common Council, February 28, 1871.

Passed to be ordained.

HENRY P. PERKINS, President.

In Board of Aldermen, February 28, 1871.

Passed to be ordained.

E. F. SHERMAN, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-One.

AN ORDINANCE AMENDING CHAPTER TWENTY OF THE ORDINANCES
OF THE CITY OF LOWELL.

Be it Ordained by the City Council of the City of Lowell, as follows :

That Section Two, of Chapter Twenty, of the Ordinances of the City, be and hereby is amended, by striking out in the twelfth line, the words "three or more Undertakers of Funerals," and inserting in the fourteenth line, after the word "annually," the words "two or more Undertakers of Funerals, and".

In Board of Aldermen, March 14, 1871.

Passed to be ordained.

E. F. SHERMAN, Mayor.

In Common Council, March 14, 1871.

Passed to be ordained.

HENRY P. PERKINS, President.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-One.

AN ORDINANCE IN RELATION TO AWNINGS, SHADES AND SIGNS.

Be it Ordained by the City Council of the City of Lowell, as follows:

SECTION 1. No person shall place, establish, or maintain any awning or shade with stationary frame, before his or her place of business or dwelling-house, or over any part of any street or sidewalk, unless the same be safely made, fixed, supported and maintained so as in no wise to incommode passengers, and so that the lowest part of such awning or shade shall be at least nine feet above the sidewalk or street; and such stationary frame, if built over a sidewalk, shall extend over the outside edge thereof, and if supported at said outside edge, shall be so supported by iron supports or columns, and such awning or shade shall not be put on before the first day of April, nor kept on after the first day of December. And no person shall place, establish or maintain any awning or shade with movable frame, before his or her place of business or dwelling-house, or over any part of any street or sidewalk, unless the frame of the same be firmly secured to the building, and the lowest part of said awning or shade be at least seven feet above the sidewalk or street. And such awning or shade shall not extend more than six feet from the building, and shall be folded up every night at sunset and during every rain.

SECTION 2. No person shall erect, set up or keep upon or in front of any building, store, shop or place of business, or over any part of any street or sidewalk, any sign, signboard, or inscription, any part of which shall project or extend more than four and one-half feet from said building, store, shop or place of business, into or over any public sidewalk, street or highway, unless the same is firmly attached to an awning. And no sign, signboard or inscription shall extend beyond the outside edge of the sidewalk; and, if the same projects more than three inches from the building, store, shop or

place of business, shall not be less than nine feet above the sidewalk, street or highway; provided, however, that this section shall not apply to signs or inscriptions painted on awnings or shades with movable frames, nor to signs erected or maintained by licensed inn-holders, as provided for in the eighty-eighth Chapter of the General Statutes of this Commonwealth.

SECTION 3. All awnings and shades shall be built, put up, and kept in repair, and all signs shall be put up and maintained, under the provisions of this ordinance, to the acceptance of the City Marshal.

SECTION 4. Sections ten and twenty-two of Chapter twenty-seven of the ordinances of the City are hereby repealed.

SECTION 5. Any person who shall offend against any of the provisions of this ordinance, shall forfeit and pay for each offence a sum not exceeding twenty dollars.

In Common Council, May 9, 1871.

Passed to be ordained.

HENRY P. PERKINS, President.

In Board of Aldermen, May 9, 1871.

Passed to be ordained.

E. F. SHERMAN, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-One.

AN ORDINANCE TO SECURE THE ENFORCEMENT OF SANITARY
REGULATIONS.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. A Board of Health shall be elected annually in the month of January or February, or at any time when a vacancy shall occur, consisting of two Aldermen to be elected by that Board, and three members of the Common Council, to be elected by said Council, with all the powers and duties assigned to Boards of Health by the statutes of the Commonwealth of Massachusetts.

SECTION 2. The Board of Health may make all regulations which they may deem necessary in regard to the removal and abatement of filth, rubbish, nuisances and causes of diseases, and shall have power to require the aid and assistance of such agents as may be needed to enforce such regulations ; to appoint one or more physicians to the Board ; and to perform any other acts and duties which may to them seem necessary for the health of the city, provided always that such acts shall be in conformity to the statutes of the Commonwealth, and the ordinances of the City of Lowell.

SECTION 3. The ordinance entitled "An Ordinance to secure the enforcement of Sanitary Regulations," passed on the thirteenth of March, eighteen hundred and sixty-six, is hereby repealed, and the Board of Health appointed under said ordinance shall cease to exist.

In Common Council, September 15, 1871.

Passed to be ordained.

HENRY P. PERKINS, President.

In Board of Aldermen, September 15, 1871.

Passed to be ordained.

E. F. SHERMAN, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-One.

AN ORDINANCE RELATING TO THE DUTIES OF THE CITY PHYSICIAN.

Be it Ordained by the City Council of the City of Lowell, as follows :

Whenever the Board of Health shall appoint one or more physicians to said Board, the words "to render all the services by law incumbent upon physicians appointed by Boards of Health," in Section 7, of Chapter 11, of the Ordinances of the City of Lowell, shall not apply to small-pox.

In Common Council, September 26, 1871.

Passed to be ordained.

HENRY P. PERKINS, President.

In Board of Aldermen, September 26, 1871.

Passed to be ordained.

E. F. SHERMAN, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Two.

AN ORDINANCE AMENDING CHAPTER FIFTH OF THE ORDINANCES
OF THE CITY OF LOWELL.

Be it Ordained by the City Council of the City of Lowell, as follows:

That Chapter Fifth of the Ordinances of the City of Lowell be amended by striking out all of Section One, and inserting in place thereof the following:

“SECTION 1. The following City Documents shall be printed in pamphlet form of the size of the annual Report of the School Committee, to wit: Mayor’s Address, Auditor’s Annual Report, Annual Report of the Directors of the City Library, Annual Report of the Superintendent of Burials, annual Report of the Chief Engineer of the Fire Department, and Municipal Register.”

In Common Council, January 23, 1872.

Passed to be ordained.

HENRY P. PERKINS, President.

In Board of Aldermen, January 23, 1872.

Passed to be ordained.

JOSIAH G. PEABODY, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Two.

AN ORDINANCE TO AMEND AN ORDINANCE RELATING TO SANITARY
REGULATIONS.

Be it Ordained by the City Council of the City of Lowell, as follows:

That an Ordinance passed by the City Council, September 15th, 1871, entitled "An Ordinance to Secure the Enforcement of Sanitary Regulations," be, and the same is hereby amended, by striking out from Section One the words, "two Aldermen to be elected by that Board," and substituting therefor "the Mayor, *ex-officio*, and one Alderman; provided, however, that in case the Mayor declines to serve, there shall be chosen two Aldermen, to be elected by the Mayor and Aldermen."

In Common Council, January 23, 1872.

Passed to be ordained.

HENRY P. PERKINS, President.

In Board of Aldermen, January 23, 1872.

Passed to be ordained.

JOSIAH G. PEABODY, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Two.

AN ORDINANCE TO REPEAL AN ORDINANCE.

Be it Ordained by the City Council of the City of Lowell, as follows :

That an Ordinance passed by the City Council, September 26, 1871, entitled "An Ordinance relating to the Duties of the City Physician," be, and the same is hereby repealed.

In Common Council, January 23, 1872.

Passed to be ordained.

HENRY P. PERKINS, President.

In Board of Aldermen, January 23, 1872.

Passed to be ordained.

JOSIAH G. PEABODY, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Two.

AN ORDINANCE AMENDING SECTION TWO OF CHAPTER TWENTY
OF THE ORDINANCES OF THE CITY OF LOWELL.

Be it Ordained by the City Council of the City of Lowell, as follows:

That Section Two of Chapter Twenty of the Ordinances of the City of Lowell be amended, by striking out the words "a weigher of coal," and inserting in place thereof the words "one or more weighers of coal."

In Common Council, April 9, 1872.

Passed to be ordained.

HENRY P. PERKINS, President.

In Board of Aldermen, April 9, 1872.

Passed to be ordained.

J. G. PEABODY, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Two.

AN ORDINANCE RELATING TO THE CITY CLERK, AND PROVIDING
FOR AN ASSISTANT CITY CLERK.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. The City Clerk, under the direction and control of the Board of Mayor and Aldermen, shall have the care and custody of the City Records, and of all documents, maps, plans, and papers, respecting the care and custody of which no other provision is made. He shall attend and keep the Records at all meetings of the City Council, and of the Board of Mayor and Aldermen.

SECTION 2. In the month of July, in the year eighteen hundred and seventy-two, and in the month of January annually thereafter, or at any time during the municipal year, if the City Clerk desires it, there shall be appointed an Assistant City Clerk for the City of Lowell. Said Assistant City Clerk shall be nominated by the City Clerk to the Board of Mayor and Aldermen, confirmed by said Board, and sworn to the faithful discharge of his duties. He shall hold his office until the first Monday of January next succeeding his appointment, unless sooner removed; and he may be removed at any time by the City Clerk, or by the Board of Mayor and Aldermen. Said Assistant Clerk shall be compensated in full for services by the City Clerk.

SECTION 3. It shall be the duty of said Assistant City Clerk to assist the City Clerk in recording, indexing, and certifying mortgages of personal property, mechanics' liens, assignments of wages, organizations of joint stock companies or religious corporations, writs, births, marriages and deaths, and also, if necessary, to attest documents as provided in the second section of Chapter Seventy-two of

the Acts of the General Court of the year eighteen hundred and sixty-nine, and perform all other duties pertaining to the office of City Clerk when thereto requested by him, or when the City Clerk shall be absent, or the office shall be vacant from any cause.

In Common Council, June 11, 1872.

Passed to be ordained.

HENRY P. PERKINS, President.

In Board of Aldermen, June 11, 1872.

Passed to be ordained.

J. G. PEABODY, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Two.

AN ORDINANCE PROVIDING FOR THE CARE AND MANAGEMENT OF
THE LOWELL WATER WORKS.

Be it Ordained by the City Council of the City of Lowell, as follows:

SECTION 1. In the month of January, in the year eighteen hundred and seventy-three, and annually afterward in said month, the City Council shall elect by concurrent vote of the two branches, one member of the Board of Aldermen and two members of the Common Council, to be members of the Lowell Water Board, to hold office during the remainder of the municipal year in which they are elected, and until others are elected in their place, unless sooner removed. In the month of March or April, in the year eighteen hundred and seventy-three, there shall be elected, by concurrent vote of the two branches of the City Council, two members of the Lowell Water Board from the citizens at large, one member to serve for one year, and one for two years, and annually thereafter, in the month of March or April, one member from the citizens at large, to hold his office for two years from the first Monday in May, in the year of his election, and until another is elected in his place, unless sooner removed. Said members elected from the City Council, and from the citizens at large, shall at all times be subject to removal from office by the City Council for cause; and vacancies from any cause may be filled at any time for the unexpired term, in the same manner as the original appointment.

SECTION 2. The persons elected from the City Council shall enter upon their duties as members of said Water Board forthwith; and the persons elected from the citizens at large shall enter upon their duties on the first Monday in May. On the first Monday in

May, annually, the members shall meet and organize themselves into a Board, by the choice of one of their number as President. They shall also choose a Clerk, who shall not be a member of the Board; and they may make such rules and regulations for their own government, and for the government of all subordinate officers by them appointed, as they may deem expedient, not inconsistent with the statute law or City Ordinances.

SECTION 3. The Lowell Water Board shall have and exercise all the powers vested in the City Council by an act of the Legislature of Massachusetts, passed on the twenty-first day of May, in the year eighteen hundred and fifty-five, entitled "An act for supplying the City of Lowell with water," and by any acts in addition thereto, so far as the same can be legally delegated; and they shall more especially have the power to appoint a Superintendent, and all necessary subordinate officers, agents, and assistants, and to remove the same at pleasure, and may fix their compensation, and the compensation of the clerk before mentioned; *provided*, that the same shall not exceed in the whole the sum appropriated therefor by the City Council; but all the powers mentioned in this section shall be subject to any limitations and restrictions contained in the ordinances, regulations, and orders of the City Council. The Superintendent and Clerk shall be residents of Lowell.

SECTION 4. The Lowell Water Board shall annually, on or before the second Monday in January, present to the City Council a Report containing a statement of the condition of the Water Works, and of the land and other property connected therewith, with an account of all receipts and expenditures, together with any information or suggestions which they may deem important, and at the same time transmit to the City Council the report of the Superintendent.

SECTION 5. The Water Board are authorized to sell or lease such of the property connected with the Water Works as they may deem expedient, subject to the approval of the Mayor. All deeds and leases shall be executed by the Mayor, and countersigned by the President of the Board.

SECTION 6. All bills for expenditures by the Water Board shall be certified by the President, examined by the Auditor, and approved by the Committee on Accounts, before they are paid by the Treasurer.

SECTION 7. The President of the Water Board shall exercise a general supervision over the Water Works, and the materials and property connected therewith, and over all subordinate officers and

agents. In case of his absence or inability, his duties may be performed by a President *pro tempore*, to be chosen by the said Board. The members of the Board, chosen from the citizens at large, shall receive such compensation for their services as the City Council may determine.

SECTION 8. The Superintendent shall take charge of the aqueducts, lands, reservoirs, and other works and property connected with the Water Works, as the Water Board may from time to time direct; and he shall perform all such services in relation thereto as may be required of him by said Water Board. He shall on or before the fifth day of January, annually, present to the Water Board a report of the general condition of the Water Works, with a detailed statement of all expenditures in his department, and such other matters as he or the said Board may deem expedient.

SECTION 9. The Water Board shall determine and assess the water rates according to section twenty of this ordinance, and whenever requested by the City Council, shall prepare and send to the City Council a schedule of their assessments of water rates, and the Superintendent thereof shall at least once in each year visit the premises of every person who takes the water; shall exercise a constant supervision over the use of the water, and attend to the enforcement of all regulations relating thereto. He shall make out and distribute all bills for the same, and on or before the tenth day of January, annually, shall present to the Board a report, containing a statement of the number of water takers, the number of cases where the water has been cut off, the number and amount of abatements, the expenditures in his department, and such other matters as he or the said Board may deem expedient. He shall keep suitable books, in which shall be entered the names of all persons who take the water, the kind of building, the name and number of the street, the nature of the use, the number of taps, and the amount charged, which shall be always open to the inspection of the Water Board, and any committee of the City Council. He shall perform such other services as may be required of him by the Water Board.

SECTION 10. All moneys due the city on account of Water Works shall be paid to the City Treasurer, and the same shall be placed to the credit of the Water Department, to which use they shall be exclusively appropriated, and shall not be paid out except as provided in section six.

SECTION 11. The annual rent for the use of the water shall be

payable in advance, on the first day of April, in each year. All charges for specific supplies, or for fractional parts of the year, shall be payable in advance, and before the water is let on.

SECTION 12. In all cases of the non-payment of the water rates for sixty days after the same are due, the Superintendent shall cut off the supply, and the water shall not again be let on, except upon the payment of the amount due, together with the sum of two dollars: *Provided*, that in cases of specific supplies, or for fractional parts of the year, where the water has been let on, it may be cut off immediately after notice given at the place that the rent is not paid, and may be let on again upon the condition before mentioned.

Unless the Water Board shall otherwise direct, the foregoing provisions shall apply when two or more parties take the water through the same service pipe, although one or more may have paid the proportion due from him or them.

SECTION 13. The Superintendent, under the direction of the Water Board, may make abatements in the water rates, in all proper cases.

SECTION 14. No member of the Water Board, and no person appointed to any office, or employed by virtue of this ordinance or of the acts of the Legislature mentioned in the first section, shall be interested directly or indirectly in any contract, bargain, sale, or agreement in relation to the Water Works, or any matter or thing connected therewith, wherein the City is interested; and any and all contracts, bargains, sales or agreements made in violation of this section, shall be utterly void as to the City.

SECTION 15. Any person who shall injure any public pipe or reservoir connected with the Lowell Water Works, or who shall break and enter the same, or draw off, or cause to be removed any of the water therefrom, or shall turn on or off the water in any such water pipe or reservoir, or shall make any opening or connection with such pipe or reservoir, or remove the cover of any hydrant, except in case of fire, without the license or permit of the Water Board, or by authority of the Mayor and Aldermen, or Chief Engineer of the Fire Department, shall forfeit and pay for each offence not less than three nor more than twenty dollars.

SECTION 16. The Superintendent, under the direction of the Water Board, shall require all persons desiring water introduced into their premises, to sign an application therefor, after which he may without delay, proceed to lay the necessary service pipe, in all

cases to the interior of the building, and all expense incurred beyond the line of the street shall be paid by the owner of the premises.

SECTION 17. The following regulations shall be considered a part of the contract with every person who takes the water; and every such person, by taking the water, shall be considered to express his assent to be bound thereby. They shall be printed upon every bill for water rent, and whenever any one of them is violated, the water shall be cut off from the building or place of such violation, although two or more parties may receive the water through the same pipe, and shall not be let on again, except by the order of the Water Board, and on payment of two dollars; and in case of any such violation, the said Board shall have the right to declare any payment made for the water by the person committing such violation to be forfeited, and the same shall thereupon be forfeited.

REGULATIONS.

First. All persons taking the water shall keep the service pipes within their premises, including any area beneath the sidewalk, in good repair, and protected from frost at their own expense; and they will be held liable for all damage which may result from their failure to do so.

Second. They shall prevent all unnecessary waste of water, and there shall be no concealment of the purposes for which it is used.

Third. No alteration shall be made in any of the pipes or fixtures inserted by the City, except by its agents, who are to be allowed to enter the premises supplied, to examine the apparatus, and to ascertain whether there is any unnecessary waste.

Fourth. No water is allowed to be supplied to parties not entitled to the use of it under the City Ordinances, unless by special permission.

Fifth. The Superintendent, with the necessary agents and assistants, may enter the premises of any water-taker to examine the quantity used, and the manner of use, and to cut off the water for non-payment of rents or fines, or any violation of the foregoing rules.

SECTION 18. The occupant of any premises, when an unnecessary waste of water occurs, shall be liable to a fine of two dollars for the first offence, and four dollars for the second offence during the same year, and shall be notified thereof in writing, and if such waste shall not be prevented, and the fine aforesaid paid within two days from the time when said notice was given, the water shall be cut off from the said premises, and shall not again be let on until the waste be stopped and the fine paid, together with an additional sum of two dollars for cutting off and letting on the water; and in

case of a third or subsequent offence, the water shall be cut off and shall not again be let on, except by vote of the Board and the payment of such fine, not exceeding ten dollars, as the Board may impose.

SECTION 19. The Water Board shall have power to establish such regulations as they may deem expedient for the introduction and use of water; and the water shall not be supplied to any building unless the pipes and fixtures shall be made conformable to the said regulations.

SECTION 20. The following rates shall be charged annually for the use of the water, from and after the first day of April in the year eighteen hundred and seventy-three, and pro-rata for all fractional parts of a year, prior or subsequent to that date.

FIRST. For a family not exceeding four persons, six dollars.

SECOND. For every additional person, fifty cents, until the number shall be twelve, then to be rated as a boarding-house.

Boarding-houses of more than twelve persons, shall pay thirty-five cents for each person, additional.

Fixtures Allowed. Under the foregoing rates the fixtures allowed in constant use shall be one hot and one cold water faucet at two sinks, and two wash basins.

Sinks and Basins. All sinks more than two shall be assessed one dollar each, and all wash basins more than two shall be assessed fifty cents each.

Water Closets. Water closets in dwellings, stores, and shops shall be assessed fifty cents for each person residing or employed on the premises, provided no water closet shall be assessed less than four dollars; and where more than one water closet is in use, each additional one shall be assessed two dollars.

For Stores, &c. For each store, office, warehouse, machine or other shop, or foundry, fifty cents shall be assessed for each individual using water in sinks and urinals for sanitary purposes only, provided that no assessment on any such premises shall be less than three dollars.

Baths. Bath tubs in dwellings or tenements shall be assessed seventy-five cents for each person residing in such dwelling or tenement, *provided* that no bath tub shall be assessed less than three dollars; and each bath tub more than one in any dwelling or tenement shall be assessed one dollar.

Set wash tubs in dwellings shall be assessed one dollar each.

Steam boilers in dwellings, for heating purposes, shall be assessed two dollars each.

Persons Counted. In ascertaining the number of persons as a basis for assessments provided for in this section, children and servants shall be counted.

THIRD. Private stables, including water for washing carriages, four dollars, and for each horse over one, two dollars; each cow, two dollars; livery stables, including water for washing carriages, for each horse, two dollars, *provided*, that in no case shall any sale or livery stable be charged less than twenty-five dollars;

omnibus or horse-railroad stables, for each horse one dollar and fifty cents; truckmen's stables, for each horse one dollar and fifty cents.

FOURTH. The right to attach a hose of not more than five-eighths of an inch orifice, for washing windows, sprinkling streets or gardens, or for use in stables, in addition to the charge for other uses, not less than three dollars. The use of the same shall be limited to one hour per day.

For Building Purposes. For every cask of lime or cement used, six cents.

Steam Engines. For each engine working not over twelve hours a day, for each horse power, four dollars.

Hotels. For each bed for boarders and lodgers, three dollars and fifty cents, or special arrangements may be made by the Water Board.

Baths. For public baths, and for each bath in any hotel, ten dollars.

Water closets in public bath houses, ten dollars.

Meters. The Water Board shall have power to ascertain by meter the quantity of water used in any case, and the proprietors of hotels, taverns, and boarding-houses, mentioned in section twenty of this ordinance, shall also have power to place within their premises, at their own expense, a sufficient water meter to be approved by the Superintendent, for the purpose of measuring the quantity of water by them respectively used. And when in any case the quantity used shall be ascertained and measured in manner before mentioned, the Water Board may establish a water rate therefor instead of the specific rate hereinbefore established.

When water is required for purposes not specified in the foregoing tariff, the rates shall be fixed by the Water Board.

SECTION 21. For water used by the city an account shall be made, and the amount thereof shall be charged to the proper appropriations and credited to the Water Works.

SECTION 22. It shall be the duty of the Police of the city to report to the Mayor all cases of the leakage, waste, or unnecessary profusion in the use of the water, and all violations of the water ordinances, that may be brought to their notice.

SECTION 23. Until the City Council shall elect a Water Board, as provided by the first section of this ordinance, all powers and duties prescribed therein shall be vested in the Joint Committee of the City Council on Water Works.

SECTION 24. All ordinances or parts of ordinances inconsistent with the provisions of this ordinance are hereby repealed.

In Common Council, July 11, 1872.

Passed to be ordained.

HENRY P. PERKINS, President.

In Board of Aldermen, July 11, 1872.

Passed to be ordained.

J. G. PEABODY, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Two.

AN ORDINANCE RELATING TO THE FIRE ALARM TELEGRAPH.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. Any person or persons who shall wilfully deface, injure, or destroy, or in any way interfere with the Fire Alarm Telegraph in this city, or any part thereof, or any of its appurtenances, shall for every such offence forfeit and pay a penalty of twenty dollars for the use of the city.

SECTION 2. Any person who shall open any alarm-box connected with the Fire Alarm Telegraph, without having authority so to do, shall forfeit and pay therefor a penalty of twenty dollars for the offence, for the use of the city.

In Common Council, November 26, 1872.

Passed to be ordained.

HENRY P. PERKINS, President.

In Board of Aldermen, November 26, 1872.

Passed to be ordained.

J. G. PEABODY, Mayor.

[The foregoing Ordinance was approved by the Superior Court, September 19, 1873.]

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Two.

AN ORDINANCE TO AMEND CHAPTER TWENTY OF THE ORDINANCES
OF THE CITY OF LOWELL.

Be it Ordained by the City Council of the City of Lowell, as follows :

That Section Three, of Chapter Twenty, of the Ordinances of the City of Lowell, be amended by inserting after the word "November" the words "or December."

In Common Council, December 10, 1872.

Passed to be ordained.

HENRY P. PERKINS, President.

In Board of Aldermen, December 10, 1872.

Passed to be ordained.

J. G. PEABODY, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Three.

AN ORDINANCE PROVIDING FOR A SINKING FUND FOR THE REDEMPTION OF THE CITY OF LOWELL WATER BONDS.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. For the purpose of providing for the debt of the City of Lowell now existing, or that may hereafter exist by reason of the introduction of water, a fund is hereby established, to be called the City of Lowell Water Loan Sinking Fund.

SECTION 2. For the payment of the certificates of debt known as the City of Lowell Water Bonds, there shall annually be appropriated the sum of Twenty-five Thousand Dollars, to be raised by taxation, and said sum so raised from year to year, together with its accumulations of interest, shall be pledged and held as said City of Lowell Water Loan Sinking Fund, and shall be invested by the City Treasurer, under direction of the Joint Committee on Finance, for the redemption and payment of the said City of Lowell Water Loan Bonds, due November 1, 1890.

In Common Council, March 11, 1873.

Passed to be ordained.

ALBERT A. HAGGETT, President.

In Board of Aldermen, March 11, 1873.

Passed to be ordained.

FRANCIS JEWETT, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Three.

AN ORDINANCE TO AMEND THE ORDINANCES OF THE CITY OF
LOWELL.

Be it Ordained by the City Council of the City of Lowell, as follows:

That Section Two of Chapter Fifteen, and Section One of Chapter Thirty-six, of the Ordinances of the City of Lowell, be, and they are hereby amended by striking out in each section the words "and the land leased by the City of the Proprietors of the Locks and Canals on Merrimack River, in the rear of the Market House Building, extending southerly to the canal," and inserting in place thereof, in each of said sections, the words "in the rear and at the westerly end of the Market House Building."

In Common Council, March 25, 1873.

Passed to be ordained.

ALBERT A. HAGGETT, President.

In Board of Aldermen, March 25, 1873.

Passed to be ordained.

FRANCIS JEWETT, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Three.

AN ORDINANCE CONCERNING THE BURIAL OF THE DEAD.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. All burials and interments of the bodies of the dead within the city, and all removals of such bodies from the city, shall be under the direction of the Superintendent of Burials, who shall, by himself, or by undertakers duly licensed by the Mayor and Aldermen, attend, manage, and conduct in a proper manner, all funerals in the city, bury the dead, keep the walls, fences, and gates of the several burial-grounds belonging to the city in good and proper repair, and take care that said places of burial be well secured and enclosed at all times; point out the place, depth and width of every grave to be dug therein; cause the graves to be dug in exact ranges, parallel with each other, and the ranges, tombs and graves to be numbered; and also record in a book, to be kept by him for the purpose, the name, the date of the death, the age, the sex, the color, the condition—(whether married, widowed or single)—the residence, the occupation, the place of death, the place of birth, the names and places of birth of parents, of each person buried, the disease of which such person died, the time and place of the burial, the number and position of the grave, and of the range or tomb where buried or deposited; which record shall, at the end of each year, be deposited with the City Clerk, who shall carefully preserve the same for the City.

SECTION 2. The Superintendent of Burials shall furnish, on Monday morning of each week, to each daily newspaper in the city, a correct list of all the deaths which occurred within the city during the week previous, with the names, dates, ages, and diseases.

SECTION 3. The Mayor and Aldermen shall annually, previous to the first day of July, license a suitable number of Undertakers to take charge, under the direction of the Superintendent of Burials, of the obsequies or funeral rites preliminary to the interment of a human body. Such licenses shall be in force until new ones are granted in the ensuing year, but may be revoked at any time by the Mayor and Aldermen.

SECTION 4. Undertakers shall provide their own hearses, horses and equipments at their own expense; and shall dig the graves, attend and manage funerals, and bury the dead whenever requested, subject to the control and direction of the Superintendent of Burials.

SECTION 5. The Superintendent of Burials and Undertakers shall receive, as full compensation for all services required in this chapter the following fees: For the funeral and burial of a body of a person twelve or more years of age, buried in the city, six dollars; under twelve, five dollars and fifty cents, and in addition to the above any excess over two dollars which they may actually pay the proprietors of the Lowell Cemetery for digging the grave; and for any body buried in any burial ground other than said Lowell Cemetery, in Lowell, in the months of December, January, February and March, one dollar in addition to the above; provided that the fees for the burial of any pauper, if over twelve years of age, shall be three dollars, if under twelve, two dollars, and that when a body is carried into a church for a funeral service an addition of one dollar shall be allowed.

SECTION 6. The Superintendent of Burials in case of his inability to obtain an Undertaker, or for other special and sufficient cause, may license, in writing, a suitable person to bury a dead body; and upon application of a friend or relative of a deceased person he shall in writing license the removal of a dead body from the city, unless some sufficient special cause requires the withholding of such license, and, except as herein provided, no person shall remove a dead body from the city, nor any person other than an Undertaker, duly licensed, bury a dead body.

SECTION 7. Whenever a dead body shall be removed from the city, said Superintendent of Burials shall record, in his Book of Records, the name, age and sex of such deceased person, his place of residence and family, the time when, the place where, and the disease of which such person died, the time of such removal, the name and place of residence of the person who made the same, and the place to which such body was removed for interment.

SECTION 8. Every Undertaker or other person, at each funeral under his charge, shall forthwith obtain and return to the Clerk of the City, the name, the date of the death, the sex, the color, the condition, (whether married, widowed or single,) the age, the residence, the occupation, the place of death, the place of birth, the disease or cause of the death, the place of burial, and the names and places of the birth of the parents of the deceased, to be recorded by the said Clerk in accordance with the provisions of law.

The Superintendent of Burials shall see that the duties required in this section are carefully and properly discharged.

SECTION 9. The Clerk upon recording the facts returned by the Undertaker or other person, shall forthwith give to the person making such return, a certificate that such return has been made, which certificate such person shall deliver to the person having charge of the interment, if other than himself, before the burial when practicable, otherwise within seven days thereafter. When a burial takes place and no certificate is delivered as aforesaid, the Undertaker, or other person having charge of the interment, shall forthwith give notice thereof to the Clerk under penalty of twenty dollars.

SECTION 10. No dead body shall be removed from any grave or tomb in the city, without the written license of said Superintendent of Burials, who shall attend himself, or cause a licensed Undertaker to attend all such removals.

SECTION 11. Any person who shall neglect or offend against any of the provisions of this chapter shall be punished for each offence by a fine not exceeding twenty dollars.

SECTION 12. Chapter Two of the Ordinances of the city, also the Ordinance passed on the ninth day of June, in the year eighteen hundred and sixty-eight, as an amendment to said Chapter Two, also the Ordinance passed March fourteenth, in the year eighteen hundred and seventy-one, as an amendment to Chapter Twenty of the Ordinances, and all by-laws and ordinances of the city inconsistent herewith are hereby repealed; and the second section of Chapter Twenty of the Ordinances of the City is amended by striking therefrom the words "three or more Undertakers of Funerals."

In Common Council, May 13, 1873.

Passed to be ordained.

ALBERT A. HAGGETT, President.

In Board of Aldermen, May 13, 1873.

Passed to be ordained.

FRANCIS JEWETT, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Three,

AN ORDINANCE CONCERNING THE BUILDING OF COMMON SEWERS
AND PUBLIC DRAINS.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. All Common Sewers and Public Drains which may hereafter be built under the authority of the City Council, or the Mayor and Aldermen, shall be so built under the immediate direction and superintendence of the Joint Standing Committee on Sewers and Drains, and said Committee shall name the materials and dimensions of which said Sewers and Drains shall be constructed, and may make and sign such contracts for labor and materials for the building thereof, as they may see fit to make and sign.

SECTION 2. All ordinances and parts of ordinances inconsistent with the provisions of this ordinance are hereby repealed.

In Common Council, May 27, 1873.

Passed to be ordained.

ALBERT A. HAGGETT, President.

In Board of Aldermen, May 27, 1873.

Passed to be ordained.

FRANCIS JEWETT, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Three.

AN ORDINANCE TO PROHIBIT AN IMPROPER USE OF THE WATER
FURNISHED BY THE LOWELL WATER WORKS.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. The use of the hose, mentioned in the Fourth clause of Section Twenty of the ordinance passed by the City of Lowell, July 12th, 1872, entitled "An Ordinance providing for the care and management of the Lowell Water Works," for the purposes therein mentioned, is hereby made subject to the further limitation that the water shall only be used on the street and the premises of the person or persons paying the city for such use, and upon the premises of no other person.

SECTION 2. Whoever offends against the provisions of this ordinance shall be subject to the fines and liabilities provided for in Section Eighteen of said ordinance, passed July 12, 1872.

In Common Council, July 22, 1873.

Passed to be ordained.

NATHAN W. FRYE, President, *pro tem*.

In Board of Aldermen, July 22, 1873.

Passed to be ordained.

FRANCIS JEWETT, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Three.

AN ORDINANCE CONCERNING TRUANT CHILDREN AND ABSENTEES
FROM SCHOOL.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. The City of Lowell hereby adopts Chapter Two Hundred and Sixty-Two of the Laws of the Commonwealth, for the year eighteen hundred and seventy-three, entitled "An Act concerning Truant Children and Absentees from School."

SECTION 2. Any minor convicted of being an habitual truant, or any child between the ages of seven and fifteen years who shall, on complaint, before any justice or court having jurisdiction, be convicted of wandering about in the streets and public places of the City of Lowell, having no lawful employment or business, not attending school and growing up in ignorance, shall be committed to the "Institution of Instruction and House of Reformation" in said city, not exceeding two years, as the justice or court may determine.

SECTION 3. The House for the Reception, Instruction, Employment and Reformation of Juvenile Offenders, connected with the Almshouse in said city, is hereby assigned and provided as the place of confinement, discipline, and instruction of the persons mentioned in said Chapter.

SECTION 4. Chapter Thirty-Two of the Ordinances of the City of Lowell, passed October 28, 1863, is hereby repealed, provided that such repeal shall not effect any action commenced under the same previous to the passage of this Ordinance.

In Common Council, September 9, 1873.

Passed to be ordained.

ALBERT A. HAGGETT, President.

In Board of Aldermen, September 9, 1873.

Passed to be ordained.

FRANCIS JEWETT, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Three.

AN ORDINANCE RELATING TO PAWNBROKERS.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. No person shall carry on the business of a Pawnbroker in this city unless he is duly licensed therefor by the Mayor and Aldermen.

SECTION 2. Every person licensed as aforesaid, shall keep a book at his place of business, in which he shall enter at the time of receiving the same, a minute description of any article left for pawn, particularly mentioning any prominent or descriptive marks on the same, with the name, age and residence (giving the street and number when possible), of the person from whom he received it, noting also the day and hour and the amount paid thereon ; and the book and articles left for pawn shall at all times be open to the inspection of the Mayor or either of the Aldermen, or of any person authorized by the Mayor and Aldermen to examine them.

SECTION 3. No Pawnbroker shall, directly or indirectly, receive any article in pawn of any minor or apprentice, knowing or having reasonable cause to believe him to be such, without the consent in writing of the parent, guardian or master of such minor or apprentice, and no article received in pawn shall be sold until at least three months after the expiration of the time for which the same was pawned or pledged, and in the manner provided in Chapter One Hundred and Fifty-One of the General Statutes.

SECTION 4. All licenses granted under this ordinance shall designate the place where the person licensed may carry on his business, and he shall not carry on the business at any other place within the city.

SECTION 5. The fee for a license under this ordinance shall be twenty dollars, and a license may be revoked at any time; and every person licensed as a Pawnbroker shall execute a bond to the city in the sum of three hundred dollars, conditioned that the said licensed person will in every particular conform to the requirements of this ordinance and the laws of the Commonwealth relating to Pawnbrokers.

In Common Council, October 28, 1873.

Passed to be ordained.

ALBERT A. HAGGETT, President.

In Board of Aldermen, October 28, 1873.

Passed to be ordained.

FRANCIS JEWETT, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Three.

AN ORDINANCE RELATING TO STENCH-TRAPS IN SEWERS AND DRAINS.

Be it Ordained by the City Council of the City of Lowell, as follows:

SECTION 1. Every private drain connecting with a main drain or common sewer in the City of Lowell, shall be provided with a suitable stench-trap, which shall be located outside of all house connections.

SECTION 2. Any person having a drain already connected with a main drain, and having no such trap, who shall fail to provide the same after the expiration of three days' notice from the City Marshal, or any person who shall hereafter fail to provide such trap at the time of making such connection, shall forfeit and pay therefor a sum not exceeding twenty dollars.

In Common Council, October 28, 1873.

Passed to be ordained.

ALBERT A. HAGGETT, President.

In Board of Aldermen, October 28, 1873.

Passed to be ordained.

FRANCIS JEWETT, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Three.

AN ORDINANCE AMENDING CHAPTER THIRTY OF THE ORDINANCES
OF THE CITY OF LOWELL.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. That Section One of Chapter Thirty of the Ordinances of the City, be and hereby is amended by adding thereto the words: "nor shall any person slaughter swine in the public streets of the city."

In Common Council, December 23, 1873.

Passed to be ordained.

ALBERT A. HAGGETT, President.

In Board of Aldermen, December 23, 1873.

Passed to be ordained.

FRANCIS JEWETT, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Four.

AN ORDINANCE FOR THE CONSTRUCTION AND MAINTENANCE OF
SEWERS AND DRAINS.

Be it Ordained by the City Council of the City of Lowell, as follows :

SECTION 1. The Mayor and Aldermen shall order, lay, make, and maintain, of such materials and dimensions as they deem proper, all such main drains or common sewers as they shall adjudge to be necessary for the public convenience or the public health, through the public streets or through the lands of any persons or corporations, and may repair the same from time to time whenever repair thereof shall be necessary, and all main drains or common sewers so laid shall be the property of the city.

SECTION 2. When any lands or real estate of any persons or corporations shall be taken for the purpose named in section one, the proceedings shall be the same as is provided in the ordinances of Lowell for the laying out of highways or streets.

SECTION 3. All persons or corporations suffering damage in their property by reason of the laying, making, or maintaining of any main drains or common sewers, shall have the same rights and remedies for ascertaining and recovering the amount of such damage as in the case of the laying out of highways or streets.

SECTION 4. One-half the expense of constructing, maintaining, and repairing any main drain or common sewer, also the whole cost of all man-holes and catch-basins, shall be paid by the city, the other one-half thereof shall be assessed by the Mayor and Aldermen upon such persons as enter their particular drains into such main drain or common sewer for the draining of his cellar or land, and upon such persons as by more remote means shall receive any benefit from such main drain or common sewer for draining his cellar or land.

SECTION 5. The Mayor and Aldermen shall first proceed and determine the amount of each lot of land or part of a lot benefited by any main drain or common sewer, and then the assessment shall be made and apportioned among the different owners of the land so benefited according to the value of the land benefited independently of buildings and improvements.

SECTION 6. When such assessments are made and apportioned, they shall be certified and signed by the Mayor and Aldermen, and notice of his assessment and the amount thereof shall be given to the party to be charged or to his tenant or lessee.

SECTION 7. Any person may enter his particular drain into any main drain or common sewer heretofore built, or which may be hereafter built or repaired under the authority of the city, on receiving the written consent of the Mayor and Aldermen; provided, such person shall first pay such assessment therefor as may be required of him under or by the laws of this Commonwealth; and provided, also, that in the materials and construction of such particular drain, he shall comply with the directions and conditions that the Mayor and Aldermen may prescribe.

SECTION 8. Every person who shall connect his particular drain with any main drain or common sewer aforesaid, without complying with the terms of the last preceding section, shall forfeit and pay the sum of twenty dollars, together with such damages by way of indemnification as the Mayor and Aldermen shall deem just and reasonable; and shall be liable to have such particular drain at any time closed up.

SECTION 9. The Mayor and Aldermen shall have power in all cases where there is any common sewer in any street, highway, passageway, or alley, to cause every owner of land adjoining such street, highway, passageway, or alley, his agent or tenant, to make a sufficient drain from his house, yard, or lot, whenever in their opinion the same shall be necessary; and shall, upon ordering such drain, give notice in writing to such owner, agent, or tenant, specifying the time within which such drain shall be completed, and in case such owner, agent or tenant shall neglect to complete the same within the time specified, the Mayor and Aldermen shall cause the same to be done, and shall recover the whole amount of the expense thereof, together with ten per cent. additional damages, by an action, to be brought in the name of the city, before any court proper to try the same; provided, however, that said additional damages shall in no case exceed twenty dollars.

SECTION 10. The Superintendent of Streets shall, under the direction of the Mayor and Aldermen, take the general care and superintendence of all the common sewers which now are or may hereafter be built or owned by the city, or which may be permitted to be built or opened by its authority; and he shall take charge of the repairing of the same (and make all contracts for the supply of labor and materials therefor), and keep an accurate account of the expense thereof, and report the same to the Mayor and Aldermen.

SECTION 11. The Auditor shall enter in a book to be kept for that purpose, all assessments made by the Mayor and Aldermen under the second section of the aforesaid act; and shall forthwith make out bills for the same and deliver them to the City Treasurer for collection, and the Treasurer shall forthwith demand payment in writing of the said bills, in the manner prescribed by law; and in case any bills or dues under this chapter remain unpaid at the expiration of three months after such demand, the Treasurer shall cause the same to be collected by a resort to the proper legal process.

SECTION 12. The Mayor and Aldermen shall in no case proceed to construct a common sewer or main drain until an appropriation to defray the cost of the same shall have been made by the City Council.

SECTION 13. Chapter Twenty-Five of the Ordinances of the City of Lowell is hereby repealed.

In Common Council, February 10, 1874.

Passed to be ordained.

NATHAN W. FRYE, President.

In Board of Aldermen, February 10, 1874.

Passed to be ordained.

FRANCIS JEWETT, Mayor.

CITY OF LOWELL.

In the year Eighteen Hundred and Seventy-Four.

AN ORDINANCE TO AMEND CHAPTER TWENTY-NINE OF THE ORDINANCES OF THE CITY OF LOWELL, RELATING TO THE FEES FOR SURVEYING LUMBER.

Be it Ordained by the City Council of the City of Lowell, as follows :

That Section Two of Chapter Twenty-Nine of the Ordinances of the City of Lowell be, and the same hereby is amended by striking out the word "seventeen" in the eleventh line, and inserting in place thereof the words "twenty-five," and by striking out the words "twelve and one-half" in the fourteenth line, and inserting the word "twenty" in place thereof.

In Common Council, April 14, 1874.

Passed to be ordained.

NATHAN W. FRYE, President.

In Board of Aldermen, April 14, 1874.

Passed to be ordained.

FRANCIS JEWETT, Mayor.

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FORTY-EIGHTH

ANNUAL REPORT

OF THE

SCHOOL COMMITTEE

OF THE

CITY OF LOWELL,

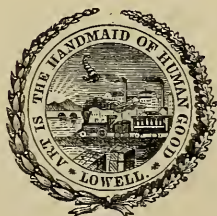
TOGETHER WITH THE

TENTH ANNUAL REPORT

OF THE

SUPERINTENDENT OF PUBLIC SCHOOLS.

1873.



LOWELL, MASS. :
STONE, HUSE & CO., BOOK AND JOB PRINTERS, 21 CENTRAL STREET.
1874.

CITY OF LOWELL.

IN SCHOOL COMMITTEE, }
January 3, 1874. }

FREDERIC T. GREENHALGE, ESQ., Chairman of the Committee on Reports, having presented the subjoined Report this day, it was unanimously adopted as the Report of the School Committee for 1873.

The Superintendent having at the same time submitted his Annual Report, it was unanimously adopted.

It was voted that thirty-five hundred copies of the above Reports be printed and distributed, under the direction of the Committee on Reports.

CHARLES MORRILL, *Secretary.*

REPORT.

IN conformity with the provisions of law relating to educational matters, the School Committee now submit to their constituents the Annual Report of the condition of the schools under their charge, and also beg leave to offer a few suggestions which appear to be proper and necessary in order to promote the interests of education.

The citizens of Lowell, we think, may be congratulated on the flourishing condition of the public schools at the present time. The year which has just closed has been marked by great improvements in many departments of these institutions, and we may say with simple truth and without appearing vainglorious, that the facilities offered by our own city for obtaining a good, thorough, practical education, are as great as can be found anywhere else in the State. One of our Grammar School-masters stated recently that he had in his school several pupils from other cities, some of them very quick and intelligent, but he invariably found all of them lacking in proper systematic training, and in the formal examinations they stood far below other scholars who were really inferior to them in natural abilities. This testimony goes to show that the system of education pursued in our schools is efficient and advantageous. Moreover, the readiness with which

*

new and improved methods of instruction and discipline are suggested by the committee or superintendent, and adopted by the teachers, may justly be regarded as indicating that the spirit of progress has entered into those who have been appointed to manage the department of public instruction.

RECENT LEGISLATION RELATING TO SCHOOLS.

The legislature, too, is not behind in manifesting a desire to promote the interests of learning. Year by year, greater powers are given to cities and towns to advance this great object. Rightly regarding the subject of the education of youth as a matter of public concern second in importance to no other question affecting the public welfare, our legislators seem determined to furnish to every community the requisite power and means to make suitable provisions for the proper instruction of all within its limits. And it must be admitted by all that this is a wise and far-seeing policy. The appropriations for school purposes are perhaps the best and most profitable investments that a community can make. Leaving out of the question the immense gains accruing from the added skill and power which education gives to the producer, we shall find that the money expended in this direction diminishes in a large proportion the amount required by our reformatory and penal institutions. It is better for us on all accounts to build schools than to build jails, and the two are so antagonistic that we may feel assured whatever is spent for the one will be saved

on the other. Several important measures in the interests of public instruction were passed at the last session of the legislature. One was an act authorizing cities and towns to furnish pupils, in the public schools, with text-books (Chapter 106). In order that the provisions of this act may be carried out, it is required that the city council shall pass an ordinance authorizing the school committee to that effect. As yet this has not been done by our municipal authorities. It will be seen that this measure goes much farther than the previous provision as to supplying pupils with books, the latter only having reference to the children of indigent parents. There are some advantages in the method of furnishing books at the public expense. The delays in obtaining the necessary books now occurring so frequently, either through the neglect of pupils or their parents' inability to supply the requisite means, will be avoided. Perhaps, also, there will be less temptation to make such frequent and capricious changes in the text-books. But at all events all the scholars will be placed on an equal footing, and time will be saved by a mode of distributing books which is so much more systematic.

By Chapter 262 of the Laws and Resolves of the same session, cities and towns are authorized to make all needful provisions concerning truants and "children not attending school and growing up in ignorance." The same act authorizes the appointment of two truant officers, instead of one as formerly; and upon requirement of three or more cities or towns the county commissioners shall

establish truant schools for the confinement, discipline and instruction of such children as are described above.

Another act of this session requires the school committee to visit the schools on some day during the first week of the term, and also on some day during the two weeks preceding the close of the school, for the purpose of organizing and examining the schools and seeing that the scholars are properly provided with books; and the committee are further required to visit their schools once a month without giving previous notice to the instructors, for the purpose of inquiring into the regulation and discipline of the schools and the habits and proficiency of the scholars. The amount to be expended for teachers' institutes is also increased one thousand dollars—the sum now authorized to be devoted to this purpose being four thousand dollars.

These provisions clearly prove that “the powers that be” will leave nothing undone in order to secure to all within the limits of the Commonwealth a liberal education; and our own city has not been slow to take advantage of the powers and privileges thus granted by the legislature.

PRESENT THEORY OF EDUCATION.

The scope and plan of education at the present time have been greatly enlarged since the day when the “three R’s” were supposed to limit the course of school study. We have, even now, occasionally to contend with that dogged spirit of conservatism which sees nothing

but affectation and folly in the "new-fangled" studies and pursuits that seem to widen the field of education (formerly fenced by Reading, Writing and Arithmetic) into an illimitable waste. A new discovery in science, or a new work of art, is regarded as dangerous to the peace and happiness of mankind; and certainly the multiplicity of text-books and the variety of studies now made part of our school course might lead a casual observer to think that the rule of instruction was *multa non multum*. But as has often been said, the mere accumulation in the memory of a vast number of facts and *data* falls far short of what we mean by education, which we understand to comprehend not only the acquirement of knowledge, but the harmonious development of the mental, moral and physical faculties. Given the proper kind of mental training, and the mind which has learned to solve mathematical problems can, with little difficulty, turn itself with equal success to the structure of plants or the analysis of language; and that education which enables its possessor to grapple successfully with any and all questions, whether new or old, is far preferable to that which simply aims to cram the mind with an unwieldy amount of learning so-called, which can seldom be turned to practical account. Principles and great underlying truths are what we deal with now, and having once firmly planted these in the mind of the student, we consider it safe to leave him to himself in following out and applying them. Once having clearly understood a rule in Grammar or Arithmetic, the pupil does not need to burden his memory with a hundred illustrations when one will adequately

serve his purpose. The aim of the educator of the present day is not so much to *teach* the scholars everything as to teach him how to *learn* everything for himself. And although the branches of learning which are followed in the public schools of Lowell appear to be so numerous, yet the manner in which instruction in them is given, prevents the mind of the learner from becoming fatigued or losing earnestness and interest.

Furthermore, as the course of study is amplified, every precaution is taken to prevent any excessive strain on the powers of the scholar. The daily sessions of our schools are shorter than formerly, our vacations and holidays more numerous, and the School Committee mean to lose no opportunity to impress upon teachers and scholars the necessity of proper and sufficient physical exercise. This matter is one of the greatest importance, and we urge it upon the careful consideration of parents, teachers and scholars. Perhaps it is proper to remark here that the subject of school furniture as bearing upon hygiene has been carefully and frequently considered by the Committee, and as a result of their deliberations, a new kind of desk and chair, manufactured by Mr. Meigs, of this city, has been placed in one of the rooms of the Primary School on Worthen Street, for trial. We hope that our successors will, at an early day, announce their decision as to the expediency of adopting this furniture generally in the public schools.

The School Committee are pleased to be able to testify to the earnestness and willingness with which the City Council co-operate in all measures affecting the interests

of education. Our excellent Superintendent of Schools, whose vigilance never tires in his exertions to supply every facility that may conduce to the better operation of the machinery in our school system, is especially attentive to the educational needs of growing districts; and as often as he has indicated to the Committee the expediency of purchasing new school-lots and erecting new school-houses, the City Council has promptly responded to the suggestion. The elegant structure on Worthen Street, occupied by Primaries Nos. 8, 12, 23 and 29, is an instance of the progressive spirit which characterizes our city government, and is alike a model of convenience for school purposes and an architectural ornament to the city.

We now come to the particular consideration of the different grades of schools.

THE HIGH SCHOOL.

In this connection it may be said that never before in any period of its successful career has the condition of the High School been as flourishing as it is at the present time. We seldom now-a-days hear a complaint in regard to the efficiency of this school. It is sufficient commendation to say that the Principal, Mr. C. C. Chase, more than sustains the high reputation he has enjoyed in the past, and has fully realized the expectations formed by the most sanguine of his friends. The increase in his salary (making it now \$2500) at the beginning of the year 1873 was a measure unanimously concurred

in by the Committee. All departments in the building seem to be progressing rapidly and harmoniously. Mr. Edwin H. Lord, the successor of Mr. Burbank, has performed his duties so well that there can be no doubt of the wisdom of his selection by the Committee. To the learning and experience which in our estimation were a *sine qua non* in such an instructor as we desired, he adds an enthusiasm and energy that are not often found. And in general the high character of the instructors in this noble institution is a matter for hearty congratulation on all sides. The veteran teacher of mathematics, Mr. Russell, is deserving of great praise for the diligence and devotion which have marked his labors during the past year. The manner in which the female teachers have done their work is above criticism. Formerly, in demonstrating the standing of our High School as a classical institution, we have frequently taken occasion to refer to the admission of its graduates on creditable terms to Harvard College, or some similar institution. But we think we have now got beyond the necessity of such a reference. The undoubted excellence of the instruction, training and discipline afforded by the High School needs no such collateral testimony to make it apparent. The frequent written examinations required are one of the best features in the discipline of this school. The scholar finds that it is not sufficient to recite a lesson glibly—he is likely to be called upon at any time within the year to prove his thorough understanding of all the studies he has been over, and he finds that his learning is nothing if not thorough.

GRAMMAR SCHOOLS.

The condition of our Grammar Schools is in the main satisfactory. The school-houses used in this grade are not all that we might wish them, but so large an expenditure is required to make any change in this respect that we are not surprised if improvement comes rather tardily. We again call attention to the necessity of better accommodations for the Moody School. The present building, both in situation and in internal arrangement, is inadequate to the requirements of the locality for the benefit of which it is intended. The Superintendent intimates that great improvement is manifest in the discipline and management of this school, and its teachers and pupils should not be cramped by poor accommodations.

During the year Mr. Samuel A. Chase has relinquished the charge of the Mann School to enter upon another sphere of duty. His long and faithful service seemed to call for some special recognition from the Committee, and a series of complimentary resolutions were passed in the Board, testifying to their thorough appreciation of Mr. Chase's exceptionally valuable labors. The school has since been under the charge of Miss Nellie M. Gallagher, who appears to perform the difficult duties of her position with satisfaction to the residents of the district. Another instance of the ability of female teachers to successfully perform tasks hitherto supposed to be beyond their powers and possible only to the stronger sex, is furnished by the Sherman School, whose principal, Miss Davis, certainly deserves approbation for the firmness, courage and judgment which she has exhibited in her

position. We trust the remuneration of these two pioneers in the demonstration of the fortitude and ability of woman in the work of education, will be placed on a proper footing, and that their services if found equal to those of male teachers may be equally well paid.

The Green School is meeting with greater success than ever. Its splendid exterior is only in keeping with the splendid work going on within its walls. The discipline maintained puts one in mind of the smooth, silent and rapid motion of a Corliss engine. With a building so vast that our other school-houses appear small by comparison, and a larger regular attendance than any other of our Grammar Schools, the order, discipline and general proficiency of the pupils are certainly something remarkable; and Mr. Lawton, the Principal, richly deserves the popularity and high reputation he enjoys. The other Grammar Schools appear to be in a flourishing condition. In some there is a large influx of foreign-born scholars, whose imperfect knowledge of our language prevents, for the present, any very rapid progress in their studies, but this difficulty diminishes every day. Mr. Perley Balch has a crowded school, and seems to be doing a good work. The Edson, Franklin, Bartlett and Varnum Schools are managed in a way that calls for no critical discussion. We find no fault in them worth mentioning here.

PRIMARY SCHOOLS.

We have now fifty-four Primary Schools, and though this seems a large number, there is still a demand for more. With that spirit of liberality and energy that has

been adverted to, the City Council has purchased land on Kirk Street on which it is intended to erect buildings for the accommodation of this grade of school—the most important perhaps of all. It is proper to urge upon our fellow-citizens generally, and upon our successors in this Board particularly, the necessity of care and judgment in the selection of teachers for these elementary schools, for it is here that the foundations of character are laid, that habits are formed, and ineffaceable impressions received.

EVENING SCHOOLS.

One of the gravest questions the Committee have had to consider was the expediency of the Evening Schools opened a short time ago—being regarded, however, rather as an experiment than as a permanent establishment. It is made certain by the report of the sub-committee having special charge of the matter that these schools meet the wants of a portion of our inhabitants who could be reached in no other way, and the eagerness and persistency with which hard-working operatives—men, women and children—devote themselves to the acquirement of learning, here made possible to them, are warmly testified to by the sub-committee. We must be careful, however, that the opportunities thus furnished for the benefit of the deserving, at a great expense to the city, are not abused and trampled upon by the worthless and idle. Severe measures are sometimes needed to keep the rough elements in these schools in a proper state of discipline. We think also it would be wise if the

amount of money appropriated for this department were fixed, so that no extravagant expenditure would be made. If the great benefits thus offered to the working classes are justly appreciated and properly improved, the money thus expended will bring back a ten-fold gain; and we trust that the efforts heretofore made in this direction will be continued with the added advantage of the experience now acquired. Certainly no nobler work, no higher mission offers itself to the benevolent spirit, than the instruction and culture of the hard-working and faithful-hearted pupils, who devote their spare time to the improvement of their minds. We commend these schools to our successors, and trust that the present scope of their operations may be more widely extended, and a still better system of conducting them may be established.

MUSIC AND DRAWING.

The study of Music and Drawing has been pursued with great profit during the year. As there are reports on these pleasing arts by special committees, we shall not say more than that we consider them a most valuable addition to the course of study in the public schools.

For a more detailed statement of facts connected with our system of schools, we must refer to the exhaustive Report of the Superintendent herewith presented, which makes our brief comments almost superfluous. In conclusion we can assure our constituents that the outlook as to educational matters is most promising, and the

same may be said of the condition of our community in all its public departments. Our city is possessed of many rare advantages. Its beautiful situation—its picturesque variety of hill, dale and river—the healthful and invigorating air it enjoys—and the energy and industry of its inhabitants, make it a most desirable dwelling place. The culture and social character of its people too are admitted on all sides; and its rate of mortality for a manufacturing city is very low. And as Science advances—(in this instance, certainly, God's messenger, doing the work of a merciful and loving God)—and day by day by the magic of ingenious contrivances, lifts or lightens the burden of the weary operative, we shall soon have as happy, prosperous and cultivated a community as can be found in the country. It is for us, as humble instruments of these grander forces appointed to carry out the purposes of the Creator, to assist with all our energy in developing the resources which at present remain latent in the minds of our working people, and to furnish them with the best possible means and the largest opportunities for self-culture. We fervently hope that the day is not far distant when we may say that there does not dwell within our precincts a single person of proper age and ordinary capacity whose mind, body and moral nature have not received careful and conscientious training. For we believe in the practical and immediate benefits to be derived from such training. In elementary schools, we furnish the knowledge and discipline that win battles, that defeat fraud and falsehood, and that contribute in a thousand other ways to insure the happiness and prosperity of a

country. Our own Commonwealth seems to be the acknowledged leader in the noble work of popular education; and in the onward march towards the glorious consummation of these endeavors—as we come nearer and nearer to

——— “that far-off divine event
To which the whole creation moves”

— we trust that the energy and progressive spirit which have heretofore distinguished the city to which we belong, will still serve to keep her in the advance.

ORGANIZATION

OF THE

School Committee, 1873.

FRANCIS JEWETT, Chairman.
JOHN A. GOODWIN, Vice-Chairman.
CHARLES MORRILL, Secretary.

MEMBERS OF THE SCHOOL COMMITTEE.

FRANCIS JEWETT, Mayor,									
ALBERT A. HAGGETT, President of Common Council,									
Ward 1—FREDERIC T. GREENHALGE,									
JAMES W. B. SHAW,									
" 2—CYRUS H. LATHAM,									
GEORGE H. PILLSBURY,									
" 3—WALTER BURNHAM,									
HENRY P. PERKINS,									
" 4—WILLIAM H. ANDERSON,									
CHARLES KIMBALL,									
" 5—CYRUS K. RUSSELL,									
WILLIAM G. WARD,									
" 6—BENJAMIN J. WILLIAMS,									
JOHN A. GOODWIN,									

} *Ex-Officiis.*

Term expires 1873.
" " 1874.
" " 1873.
" " 1874.
" " 1873.
" " 1874.
" " 1873.
" " 1874.
" " 1873.
" " 1874.

STANDING COMMITTEES.

- ON ACCOUNTS—Messrs. Jewett, Haggett, Ward, Anderson and Shaw.
ON SCHOOL-HOUSES—Messrs. Burnham, Latham, Kimball, Pillsbury and Greenhalge.
ON TEACHERS—Messrs. Kimball, Goodwin, Anderson, Greenhalge and Pillsbury.
ON REPORTS—Messrs. Greenhalge, Goodwin, Williams, Latham and Haggett.
ON BOOKS—Messrs. Anderson, Kimball, Goodwin, Shaw, Williams and Perkins.
ON SALARIES—Messrs. Russell, Jewett, Haggett, Williams and Burnham.
ON PENMANSHIP AND DRAWING—Messrs. Goodwin, Pillsbury, Shaw, Latham and Russell.
ON MUSIC—Messrs. Shaw, Perkins, Ward, Russell and Haggett.
ON FREE EVENING SCHOOLS—Messrs. Latham, Russell, Ward, Perkins and Burnham.
ON SUSPENSION OF THE SCHOOLS—Messrs. Jewett, Perkins and Pillsbury.
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CHARLES MORRILL, Superintendent of Public Schools.
Office in City Government Building.

ORGANIZATION

OF THE

School Committee, 1874.

FRANCIS JEWETT, Chairman.
JOHN A. GOODWIN, Vice-Chairman.
CHARLES MORRILL, Secretary.

MEMBERS OF THE SCHOOL COMMITTEE.

FRANCIS JEWETT, Mayor,	}	<i>Ex-Officiis.</i>
NATHAN W. FRYE, President of Common Council,		
Ward 1—JAMES W. B. SHAW,		Term expires 1874.
WILLIAM HARDMAN,	“	“ 1875.
“ 2—GEORGE H. PILLSBURY,	“	“ 1874.
CYRUS H. LATHAM,	“	“ 1875.
“ 3—HENRY P. PERKINS,	“	“ 1874.
GEORGE E. PINKHAM,	“	“ 1875.
“ 4—CHARLES KIMBALL,	“	“ 1874.
WILLIAM H. ANDERSON,	“	“ 1875.
“ 5—WILLIAM G. WARD,	“	“ 1874.
JOSIAH G. PEABODY,	“	“ 1875.
“ 6—JOHN A. GOODWIN,	“	“ 1874.
BENJAMIN J. WILLIAMS,	“	“ 1875.

STANDING COMMITTEES.

ON ACCOUNTS—Messrs. Jewett, Frye, Shaw, Ward and Peabody.
ON SCHOOL-HOUSES—Messrs. Shaw, Pinkham, Kimball, Pillsbury and Hardman.
ON TEACHERS—Messrs. Kimball, Goodwin, Anderson, Pillsbury and Pinkham.
ON REPORTS—Messrs. Williams, Anderson, Goodwin, Latham and Frye.
ON BOOKS—Messrs. Anderson, Kimball, Goodwin, Shaw, Williams and Perkins.
ON SALARIES—Messrs. Jewett, Frye, Peabody, Williams and Pinkham.
ON PENMANSHIP AND DRAWING—Messrs. Goodwin, Pillsbury, Ward, Latham and Hardman.
ON EVENING SCHOOLS—Messrs. Latham, Peabody, Ward, Hardman and Perkins.
ON MUSIC—Messrs. Ward, Perkins, Pinkham, Shaw and Latham.
ON SUSPENSION OF SCHOOLS—Messrs. Jewett, Perkins and Pillsbury.

CHARLES MORRILL, Superintendent of Public Schools.
Office in City Government Building.

TENTH ANNUAL REPORT
OF THE
SUPERINTENDENT OF PUBLIC SCHOOLS.
1873.

Superintendent's Report.

To the School Committee of Lowell :

In conformity with the rules, I respectfully submit the following report :

SUMMARY OF STATISTICS.

Value of real and personal property,	\$35,258,527
Population (Census of 1870),	40,928
Population (Estimated, 1873),	47,000
Number of Polls,	10,805
Increase for the year,	425
Number of children in the city between five and fifteen years of age,	
May 1, 1873, as returned by the Assessors,	6,728
In Ward One, 626; Ward Two, 823; Ward Three, 1,533; Ward	
Four, 1,590; Ward Five, 1,517; Ward Six, 639.	
Increase for the year,	429
Number of public schools in the city,	64.
One High, nine Grammar and fifty-four Primary Schools.	
Increase for the year,	0
Number of teachers employed in them,	120
High School, three males and five females.	
Grammar Schools, eight males and forty-eight females.	
Primary Schools, fifty-four females.	
In the High and Grammar Schools, one teacher of penmanship	
and drawing, and one teacher of vocal music.	
Increase for the year,	1
Average number of scholars belonging to all the schools,	5,082
High, 258; Grammar, 2,275; Primaries, 2,549.	
Increase for the year,	151
Average attendance in all the schools,	4,623
High, 253; Grammar, 2,062; Primaries, 2,308.	
Increase for the year,	91
Average number belonging to each teacher,	43
High, 32.2; Grammar, 40.6; Primaries, 47.2.	

Average per cent. of attendance,	91
High, 98; Grammar, 90.6; Primaries, 90.6.	
*Average cost of each scholar for tuition only, calculated on the average number belonging,	\$18.56
High, \$44.17; Grammar, \$21.60; Primaries, \$13.26.	
The salaries of the teachers of penmanship and drawing, and of vocal music, are divided between the High and Grammar Schools, one-tenth to High, nine-tenths to Grammar.	
Amount standing to the credit of schools,	\$144,520.64
Expenditures,	133,440.70
	<hr/>
Balance undrawn January 1, 1874,	\$11,079.94
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Amount standing to the credit of school-houses,	\$43,349.98
Expenditures,	42,651.51
	<hr/>
Balance undrawn January 1, 1874,	\$698.47
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Amount paid to teachers during the year,	\$94,351.60
For the High School (eight teachers),	11,097.50
For the Grammar Schools (fifty-six teachers),	46,434.24
Bartlett School (eight teachers),	6,344.47
Colburn School (six teachers),	5,542.50
Edson School (eight teachers),	6,302.29
Franklin School (five teachers),	4,634.14
Green School (nine teachers),	6,771.76
Mann School (five teachers),	4,518.55
Moody School (eight teachers),	6,470.53
Sherman School (one teacher),	730.00
Varnum School (six teachers),	5,120.00
For the Primaries (fifty-four teachers),	33,819.86
To teacher of penmanship and drawing,	1,500.00
To teacher of vocal music,	1,500.00
	<hr/>
Received by the Superintendent and paid over to the City Treasurer, for tuition of non-resident children attending High School,	282.60
Grammar Schools,	236.00
Primary Schools,	00
	<hr/>
On account of books and stationery furnished Evening Schools,	43.68
For singing books, and for books furnished children of indigent parents,	23.01
	<hr/>
Received by the City Treasurer from the Commonwealth, city's pro- portion of the School Fund,	1,292.84

* This is for the period extending from November 30, 1873, to December 24, 1874.

The expenditures this year are \$30,596 larger than last year.

The amount paid to teachers during the year is \$17,-020.25 larger than the amount paid last year.

Of this over \$2,400 was on account of Primaries 53 and 54 established in May, of Primary 55 established in October, of the Sherman School established in December—all in 1872; and of the new department established in the Moody School last February.

About \$2,600 was on account of the increase in the salaries of the female teachers as established in February and April, last year. (See Appendix A.)

The balance, \$12,000, was caused by changing the Rule relating to the payment of teachers' salaries.

On the opening of the new Primaries in May, last year, Miss Sarah L. Gates was transferred from No. 21 to No. 53, and Miss Abby D. Gates from No. 31 to No. 54. Both teachers had served the city for a number of years and were receiving the highest salary. The amount paid for the remainder of the year, to the teachers who succeeded them in Nos. 21 and 31, was only \$334.50. The teacher of No. 55, established in October, received \$30, making for the three Primaries, \$364.50. The teacher of the Sherman School, established in December, received no pay until the close of the term in February this year.. The teachers of these schools, with the teacher of the new department in the Moody School, have received this year \$2,796.58.

The largest amount paid to a female teacher last year was in the High School, \$712.50; and in the Grammar and Primary Schools, \$575. This year all the female teachers in the High School are receiving the maximum salary, \$750; and seventy-seven out of one hundred and one teachers in the Grammar and Primary Schools are receiving the maximum salary, \$600.

The salaries of teachers are established for the *school* year (which commences in September and ends in July) and not for the calendar or municipal year.

The *school* year has, until the present year, been divided into *four terms*, and teachers have been paid *one-fourth* of their annual salary on the last day of each term. The first term ended on the Saturday next preceding Thanksgiving week, and the second, third and fourth terms ended in February, May and July of the following year. By the present rules, the school year is divided into three terms, the first ending on the day before Christmas, the second on the first Saturday in April, and the third on the third day of July; and teachers are paid *one-tenth* of their salaries *monthly*, commencing on the tenth day of July.

Under the old rule the amount paid to teachers on the Saturday before Thanksgiving week would have been \$20,782.70, and the whole amount paid for the year would have been \$82,331.99, an increase of \$5,000 over the amount paid last year; and the amount to be paid in the first six months of 1874 would be (at the same rate) \$64,127.73.

The monthly payments to teachers were as follows: For September, \$8,381.65; October, \$8,332.40; November, \$8,234.76; December, \$8,303.50. Total for four months, \$33,252.31.

The amount to be paid in the first six months of 1874 will be about \$49,875.

The difference between the sum of the monthly payments (\$33,252.31) and what would have been paid under the old rule (\$20,782.70) is \$12,469.61.

The largest of the items which make up the \$13,575.20 increase in the expenditures, other than for salaries of the teachers of the day schools, are as follows:—

The bill of the Superintendent of Streets (mostly for fuel), is larger than last year by \$2,600.

He informs me, however, that all the schools, except the Green, have a supply sufficient to last through the season, and some of them, through the year. At the Green School-house the coal-bin is small, while the building is large, and the boilers have to furnish steam for the day schools; for the evening schools in the basement, and in the hall and adjoining rooms four evenings in a week, from November 11th to March 3rd; and for the Church of the First Congregational Society on Sunday.

The bill of the Superintendent of Public Buildings is \$500 larger than last year.

There have been paid out for Evening Schools (including Drawing Schools) \$2,700 more than last year. Part of this is due to the fact that the bills of the teachers of the Evening Schools for the winter of 1872-73, and of Mr. Harrison, teacher of Free Hand Drawing, for the same period, were paid this year.

About \$1,200 have been expended to furnish the schools with drawing-books, writing-books, ink and stationery; \$2,000 in supplying the schools with water; \$644.50 for boiler flues; \$686.67 for Truant Officers; and \$600 for a piano for the High School.

The amount paid on account of books furnished the children of indigent parents has been considerably increased by the large loss from wear and tear; by the introduction of one new school-book, the Child's Book of Nature, and by the change of singing-books. The expenditures on several of these counts will be much smaller next year than this.

SCHOOL-HOUSES.

The Primary School-house on High Street was finished in February, and the hall was fitted up in October for the use of an Evening School. The cost of the building, including land and furniture but not the fitting up of the hall, was \$11,663.44.

The Worthen Street house was finished in season for occupancy in September. It is by far the best of our Primary School buildings. The basement is concreted and furnishes a fine play-ground for the children; the corridors are spacious; the whole building, from basement to hall, is warmed by steam; the windows are large, affording abundance of light; and there is a full supply of the best water in the world. The whole, land, house and furniture, cost \$26,236.81. One of the rooms is furnished with Meigs' patent school-desk and chair, which, I believe, are much liked by teacher and scholar, and are claimed to be a great improvement over any chair and desk yet found in a school-room.

The Elliott Street house was thoroughly remodeled in the summer vacation. It was for a time a question with the Committee on Lands and Buildings whether it would not be economy to sell the building and lot and erect a new building on a lot but a short distance off on Appleton Street, but the price asked by the owner was considered an exorbitant one, and it was decided that the house might be improved so as to serve a very good purpose for several years. It contains four rooms as before, two above and two below, but there is but one entry on each floor and one flight of stairs. The windows have been enlarged, water brought into each room, and the yard so arranged as to afford a very comfortable play-ground at recess—a great source of gratification to the neighbors. The cost of this improvement was about \$1,500.

The school-house on Tilden Street, belonging to the Merrimack Company and occupied by Primary No. 12, and for which the city paid an annual rent of \$94, was given up in June.

The other school-house on the same street, occupied by Primary No. 23, was sold in November for \$3,450, the Committee having no further use for it.

The school-house, at the head of Worthen Street, lately occupied by Primary No. 8, has been moved to Carter Street, to supply a want in that neighborhood. The school lot on

Carter Street has been enlarged, and the house placed on the eastern side. The cost of moving was \$350, and of putting in a cellar, \$285. It will be ready for occupancy about the tenth of January. The citizens of that part of Ward 3 desired a building like that on Worthen Street, and it was believed that if the Committee on Lands and Buildings had consented to erect such an one, the Bleachery Company would have enlarged the lot of land on Carter Street to any reasonable extent at almost a nominal price, but the appropriation for school-houses was nearly exhausted, and the Committee on Lands and Buildings decided to move the house from Worthen Street, to afford temporary accommodations.

The Colburn School-house and yard have this year received the attention they have long needed, and the premises are now very comfortable, considering the fashion and age of the building. The projection that was the cause of so much gloom in the northeast room has been taken down, the unsightly pillars removed, and the yard enlarged on three sides and graded so as to admit of the windows in the lower front rooms being cut down. Should it be necessary, a Mansard roof could be put on and two more rooms added to the building. The cost of the work was \$6,682.71.

After the purchase of the block on Kirk Street the School Committee resolved to ask the City Council to erect such a building as would furnish accommodations for the Board, the Superintendent of Schools, the Truant Officers, and the Drawing Schools required to be kept by act of the legislature. It seemed to them, as to many others, that the site was the best in the city for these purposes. The Drawing Schools are now held in the same rooms as last year in the Green School-house, and they discommode, to some extent, the Grammar School, as the hall is occupied by advanced classes two evenings in the week.

All the school-houses are in very good condition, and will need but little attention the present year, except for the purpose of improving the ventilation.

ATTENDANCE.

The attendance during the year has been very good, though the per cent. of attendance is a fraction less than last year, owing doubtless to a change in the rule relating to membership. The number of scholars reported as belonging to the schools at the close of the year is three hundred and forty-three larger than last year. Our Truant Officers are admirably fitted, by natural disposition and long experience, for the discharge of the peculiar and often perplexing duties devolved upon them, and we may truly say that in them we have a strong "force."

The following table will show the whole year's labor, and the number of cases investigated by Mr. Huse from January 1st to September 1st, and by Messrs. Huse and Lang for the remainder of the year:—

KIND OF CASES.	Jan. 1st to Sept. 1st.	Sept. 1st to Jan. 1st.	Total.
Number of cases,	333	388	721
Truants,	96	64	160
Absentees,	215	257	472
New scholars,	22	45	67
Misdemeanors,	16	22	38
Returned second time,	22	34	56
Returned third time,	15	22	37
Arrested,	19	20	39
Sentenced,	12	14	26
On probation,	7	6	13

Those reported as absentees had for excuses sickness of themselves or members of the families to which they belonged, lameness, want of proper clothing, or their assistance was actually needed by their parents.

The misdemeanors consisted of pilfering from schoolmates and others, insulting people on the street, and small acts of malicious mischief. Those brought before the court and convicted were sentenced to the House of Employment and Reformation for Juvenile Offenders, in the city of Lowell, for the term of from three months to two years each. Of those sentenced, five were actual truants, and nine were street boys or "wanderers."

The Truant Officers desire the Board to give them written instructions as to their duties, especially with regard to that class of children employed in manufacturing establishments in the city.

PRIMARY SCHOOLS.

The number of Primary Schools is fifty-four. Four of these are in small one-story buildings. No. 2, on School Street, is under the charge of Miss Annie S. Harlow and is rapidly improving in character under her "mild but firm and equal government."

No. 3, on Paige Street, is also a good school. I have never seen it in better condition than during the last year. The teacher, Miss Abby F. Watson, is very enthusiastic in her work, and has been very successful in teaching her little ones music from Mason's Primary School Chart. At her request I permitted her to make the experiment, and the children entered into the matter with a zest truly delightful to see. This is one of the schools for which more and better accommodations were asked a year ago, and for which purpose the property on Kirk Street was purchased. The whole number of scholars received into the school during this year

is one hundred and fourteen. The number of names registered as applicants who could not be received for lack of accommodations was forty-three. These all reside in the immediate neighborhood of the school. The average number of pupils belonging to the school for the year is fifty-four.

Primary No. 5, on Elliott Street, an ungraded school, has been graded with the three other Primaries in the building. Each school now contains three classes, the lowest of which are under the charge of Misses Stearns and Peabody. Miss Stearns, being the oldest teacher in the building, was permitted to select her school, and she chose the lower grade. In both schools of that grade Leigh's method of teaching beginners is followed with good success.

In September Primaries 8, 12 and 29 were transferred to the new house on Worthen Street. The building was not at first intended for any other Primaries than Nos. 8 and 29, the former being situated by the side of a manufactory, and the latter in the ward room on Middle Street. But as No. 12 was warned out of the school-house on Tilden Street, it was deemed best to transfer the school to one of the rooms intended for the Drawing Schools, as these last schools could be accommodated for the present in their quarters of last year. No. 23, also on Tilden Street, in about a month, followed No. 12.

Primaries 9 and 51 are still in narrow quarters over the ward room, on Church Street. Their average number belonging is *fifty-one* and *fifty*.

Primary No. 10, on Race Street, has been graded with Primaries 36 and 38, on Cabot Street. Miss Neal wisely chose the lowest grade, composed of the fifth and sixth classes. Mrs. Beard has the first and second classes, and Miss Kidder the third and fourth. This arrangement is working admirably.

During the past term, Primaries 33 (upper grade), in the Colburn School-house, and 42 (lowest grade), on Ames Street,

became so crowded, and applications for admission to the lowest grade were so numerous and constantly increasing, that a school was formed out of the lower half of No. 33 and the upper half of No. 27 (middle grade), and placed under the charge of Miss Laura E. Lee. At the same time a large number of the scholars in the lowest grade were placed with those in the middle grade under the charge of Miss Drew, and room was in this manner made for the numerous applicants that had been unable to gain admission. At the last meeting of the Board Miss Lee was *elected* teacher of the school under her charge, which was numbered 56. The number of scholars belonging to these schools, at the close of the term, December 24th, was two hundred and one.

Primary No. 35 was transferred in February from the Moody School-house, and No. 52 from the ward room on Fayette Street, to the new house on High Street. At the same time No. 35 was graded with Primaries 16, 37 and 52 in like manner as the schools on Elliott Street.

A slight change has been made in the course of study in the Primary Schools, by which the difficult parts of the Arithmetic are omitted, more attention bestowed upon Reading, Writing and Spelling, and certain parts in the course of study in the eighth class in the Grammar School added. This has been rendered necessary in consequence of promotions to the Grammar Schools being made but once a year.

Scholars entering the Primary Schools at five years of age are, as soon as possible, formed into a class called the sixth, in one year's time finish the course laid out for the sixth and the fifth, and become the fourth class at the beginning of the next school year, in September. So the first class, in six months' time, finish that part of the course of study allotted to them, and, after, enter upon the studies of the eighth class in the Grammar School, excepting, however, Worcester's Speller and Colburn's First Lessons. If such arrangement is not interrupted it is believed that children who are not

kept from school by sickness or work may easily go through the Primary and Grammar Schools in the allotted time, and enter the High School at fourteen years of age.

The Primary Schools are in an excellent condition, generally, and the teachers well worthy of the confidence of the Committee.

GRAMMAR SCHOOLS.

Of this class of schools very little can be added to what has been said. The schools are, with the exception of the Mann, under the same principals as last year. The Sherman School has had one year's experience, and considering the elements composing it, the principal has met with great success. Another year, it will begin to resemble, in classification and order of exercises, the older Grammar Schools. Miss Davis, the teacher, deserves great praise for the courage she has shown in meeting and surmounting the obstacles in her way. I confidently believe she has labored harder and under more discouraging circumstances than any other Grammar School principal in the city.

In the Bartlett School Miss Cemantha R. Nichols has charge of the room left vacant by the resignation of Miss Sabra Wright; and Miss M. Ida Howe, of that formerly under the charge of Miss Nichols.

In the Colburn School there have been no changes, except that the room temporarily opened in February was closed in July, and since the eighth of October has been occupied by Primary No. 33.

In the Edson School Miss Fanny A. Scripture was elected in January to fill a vacancy, and Miss Helen A. Bowers, in August, was transferred from Primary School No. 39 to the place made vacant by the resignation of Miss Helen M. Hunt.

In the Franklin and Green Schools there have been no changes. I recommend that the classes in the latter school

be graded so as to conform in organization to that in the other large Grammar Schools.

The Mann School has lost the services of Mr. Samuel A. Chase, its very efficient and popular principal for twenty years. On accepting his resignation the Board unanimously adopted the following resolutions:—

Resolved, By the School Committee of the city of Lowell, as follows: That this Board has accepted, with great regret, the resignation of Samuel A. Chase, who, after twenty years of most faithful and successful service as principal of the Mann School, has selected another field of labor.

Resolved, That Mr. Chase's devotion to the peculiar interests of his school, and his constant endeavor to inspire his pupils with pride in their school, and a desire to derive the full benefit of its course of instruction, merits our hearty thanks, and leaves an example worthy of the consideration of all the teachers in our employment.

Resolved, That Mr. Chase carries with him our warmest regard and confidence, and we trust that in his new field of action, he may be equally successful as in that he leaves, and will find it more conducive to his personal advantage.

I cannot help adding that my personal relations with Mr. Chase, during the whole period of his connection with the schools, have been of the pleasantest kind, and that I fully appreciate the loss the city and the patrons of the school have suffered from his resignation. Since Mr. Chase left, Miss Nellie M. Gallagher, head assistant, has performed the duties of principal with entire success. Her salary is now \$800. Miss Frances M. Webster has been elected assistant to Miss Gallagher.

In the Moody School, Miss Mary E. Hardman has been transferred to the room before under the charge of Miss Diana M. Huntoon, resigned; and Miss Frances E. Hardman has been elected successor to Miss Mary. The school is now organized like the Bartlett and Edson, and is in a more pros-

perous condition than I have ever seen it. On a late visit to the school I heard most excellent reading by the class of girls in the principal's room.

There have been no changes in the corps of teachers in the Varnum School, nor in the excellent character of the school, except for the better.

The course of study in this grade of schools has been changed somewhat, in order to render it possible for children of average capacity, if attentive to their studies, to accomplish the work of each class, creditably and easily, in the time allotted. Hooker's Child's Book of Nature has been introduced as a reading-book for the middle classes, and it has become the most popular book in the school. The duties of the first assistant have been a subject of considerable feeling in some of the schools, and I consider it a matter of sufficient importance to claim the early attention of the incoming Board. In the Green and Varnum Schools the first assistant has such duties to discharge as are prescribed by the principal, and is, in all respects, his assistant. In the other schools she occupies a recitation room adjoining the main room, and is responsible for particular classes or particular studies, as may be required or agreed upon. This state of things, it will be plainly seen, may be the cause of serious misunderstanding between two whose interests are identical, the assistant thinking that an unreasonable amount and variety of labor are devolved upon her, and the principal, that the assistant is slow to perform duties about which there is no cavilling. However harmonious their relations with each other may appear, there is reason to fear that under the present arrangement the best results are not always secured. I recommend that all the Grammar School-houses having recitation rooms be altered so as to make eight rooms of the same size, and that each principal have an assistant in his room upon whom shall

devolve such duties as he may prescribe. This will give the principal time to "get acquainted" with his scholars and teachers, and thoroughly to systematize the work in each department of his school. This arrangement will give twenty-seven more sittings to each school.

Tables of results of examination of candidates for admission to the High School are purposely omitted from this report, from a conviction shared by the Committee, that such comparisons between schools, as have been made in the years past, are productive of evil rather than good. All the classes in the Grammar Schools were subjected to a written examination, upon questions prepared jointly by the principals, and the results have nearly all been brought to the Superintendent's office. As soon as possible a summary of these reports with details of the examination will be given.

HIGH SCHOOL.

Mr. Levi S. Burbank, the efficient teacher of the sciences, resigned in July to take charge of Warren Academy, in Woburn, and Mr. Edwin H. Lord, a graduate of Bowdoin College, was elected to fill the vacancy. Mr. Burbank had attained a high rank as teacher of his specialities, and his resignation was accepted with expressions of deep regret. Mr. Lord comes very highly recommended, and is fully answering the expectations of the Committee. No other changes have occurred in the school. The semi-annual written examination, by vote of the Board, will take place during the last week in January. Under the rules, the close of the "first half" of the school year comes about a month after Christmas. The High School, I have good reason to know, ranks second to no High School in the State, either in management or teaching.

The customary graduating exercises were held in Huntington Hall, on Thursday evening, July 3. Diplomas

were presented to the following-named graduates, by Wm. H. Anderson, Esq.:—

FOUR YEARS' COURSE.

Frank Leslie Baker,
William Aaron Favor,
Frank Edward French,
John Ernest Hardman,
Warren Ozro Kyle,
Frank William Searle,
Adelaide Baker,
Mary French Battles,
Elizabeth Maud Dowling,
Nellie Frances Howe,
Emma Elizabeth Hubbard,

Susie Moore Hyde,
Kate Grace Jones,
Agnes Isabella Meldrum,
Carrie Nash,
Helen Augusta Nichols,
Josephine Agnes Paulint,
Eliza Hobson Sawyer,
Marion Jennie Stevenson,
Anna Cora Webber,
Ella Louisa Wright.

THREE YEARS' COURSE.

Harry Barton Bachelder,
Harry King Boardman,
Timothy Henry Brennan,
Harry Appleton Brown,
Michael Doyle,
Charles Rutherford Goddard,
George Lyman Lawson,
James Simeon Moors,
Arthur Perry Morse,
Austin Bryant Raymond,
George Granville Read,
Edwin Herbert Russell,
Edward Herschel Scribner,
Edgar Andrew Wedgwood,
Frederick William Wood,

Nellie Maria Brown,
Jennie Elizabeth Clark,
Emily Jane Eacott,
Ella Roxanna Eaton,
Flora Inez Farson,
Mary Ann Hammill,
Jennie Eliza Hanson,
Sarah Elizabeth Healy,
Annie Blacklar Ingalls,
Lilias Amelia Merrill,
Kate Mary Osgood,
Zelpha Marilla Plaisted,
Addie Marion Thissell,
Maria Louisa Trask.

The Carney Medals were presented by Hon. John A. Goodwin, to

William A. Favor,
Herbert S. Johnson,
George S. Motley,

Alice M. Clark,
Nellie M. Freeman,
Helen A. Nichols.

Honorable mention was made of George S. Butters, Jr., ineligible to receive a medal, being a non-resident.

CHANGES IN THE SCHOOLS.

RESIGNED.

Levi S. Burbank,	Assistant, High School.
Helen M. Hunt,	“ Edson “
Samuel A. Chase,	Principal, Mann “
Diana M. Huntoon,	Assistant, Moody “
Ella F. Perkins,	No. 23, Primary “
Ella J. Hale,	“ 31, “ “
Emma J. Alford,	“ 39, “ “

TRANSFERRED.

Helen A. Bowers, from Primary No. 39 to Edson School.

ELECTED.

Edwin H. Lord,	Assistant, High School.
Cemantha R. Nichols,	“ Bartlett “
M. Ida Howe,	“ “ “
Fanny A. Scripture,	“ Edson “
Frances M. Webster,	“ Mann “
Mary E. Hardman,	“ Moody “
Frances E. Hardman,	“ “ “
Cornelia Davis,	Principal, Sherman “
Annie S. Harlow,	No. 2, “ “
Anna F. Peabody,	“ 6, “ “
Alice M. Healey,	“ 23, “ “
Alice L. Frye,	“ 30, “ “
Elizabeth A. Balch,	“ 31, “ “
Helen A. Bowers,	“ 39, “ “
Abbie L. Sargent,	“ 39, “ “
Julia Leighton,	“ 50, “ “
Laura E. Lee,	“ 56,* “ “

EVENING SCHOOLS.

The Evening Schools that were opened November 11th, 1872, were closed, as required by rules, March 4th, 1873.

The principals of the schools were as follows: Mrs. J. B. Bradt, H. Minnie Robbins, Cornelia Davis and Mrs. H. G. Crosby, Green School; Gertrude Sheldon and Abby F. Morrison, Free Chapel; Julia Keese and Ida Wilson, Mission

* Established December 29th.

School-house, Centralville ; Mrs. Sarah C. Wallace and Helen C. Frye, Mission School-house, near Davis' Corner.

All the schools were largely attended, and your Committee are of the opinion that much good was done. The scholars, after the classes had been organized, were attentive to their studies, and, with rare exceptions, obedient to their teachers. The schools were, as usual, of a mixed character, containing men, women and children of many nations and many climes. "Among the pupils at the Free Chapel," wrote one of the principals, "were natives of England, Ireland, France, Germany, Norway and the Ionian Isles. There were also French Canadians, a large portion of whom never had learned to read even in their own language. These *foreign-born* were excelled by no others in their correct deportment; and by their earnestness and application, they seemed to appreciate the advantages afforded them."

At the close of the schools, the teachers reported the number of books on hand, and other statistics, from which is made the following

S U M M A R Y.

LOCATION OF SCHOOL.	No. of Teachers.	No. of Ev'gs. Taught.	No. of Different Scholars.			Average Attendance.		
			Male.	Female.	Total.	Male.	Female.	Total.
Basement Green School-house,	18	62	298	180	478	90	56	146
Free Chapel,	10	62	283	142	425	58	27	85
Mission Sch.-house, Cent' ville,	7	63	72	57	129	28	31	59
Mission Sch.-house, Davis' cor.	4	62	139	55	194	30	21	51
Total,	39	63	792	434	1226	206	135	341

EXPENDITURES.

H. R. Barker & Co., fitting up basement of Green School-house, . . .	\$327.03
Superintendent Public Buildings, floor boards, strips, nails and labor, . .	156.80
Superintendent Public Buildings, lumber for tables, horses, and labor, . .	100.00
Thomas Sanborn, white-washing,	46.85
H. C. Church, 13 dozen ink bottles, and filling same,	10.79
Adams & Co., 300 chairs,	279.00
Transportation,	92
Sundry persons for printing, advertising, and posting bills,	40.00
H. C. Duganne, cash paid for making an entrance into Free Chapel (\$14.78), and for fuel (\$20.),	34.78
Independent Union Mission, rent of house, &c.,	25.50
Howard Mission School-house, rent and fuel,	33.00
Janitors,	170.50
Books and stationery,	269.95
Gas,	263.24
Heating Green School-house (estimated),	50.00
Paid for instruction to teachers of Green School,	1,022.25
Free Chapel,	590.00
Independent Union Mission, Davis' Corner,	254.50
Howard Mission,	326.50
	<hr/>
	\$4,001.61
CR.	
Cash received for writing-books,	43.68
	<hr/>
	\$3,957.93

Expense per evening for a scholar, based on the average attendance:

Green School,	11 $\frac{3}{10}$ cents.
Free Chapel,	11 $\frac{2}{10}$ cents.
Independent Union Mission, Davis' Corner,	10 $\frac{3}{10}$ cents.
Howard Mission, Centralville,	8 cents.

The number of schools opened this year is five, viz: one in the basement of the Green School-house; one in the Ward Room on Church Street (exclusively for males); one in the hall of the Primary School on High Street (exclusively for females); one in the Primitive Methodist Chapel, near Davis' Corner; and one in the Howard Mission School-house in Centralville. The number of teachers employed in them is fifty-six. All the schools are in a very prosperous condition.

Last year the teachers were paid at the close of the term. This year they are paid monthly. The amount paid December 10th was \$589. The amount due January 10th, 1874, for the month of December, is \$905.

The fact of the teachers being paid this year for the whole of last year's school, and for the two months that have passed in the current year, will account for part of the great expense of the schools. Your Committee would suggest a very careful observation of the working of the Evening Schools, inasmuch as they are in a degree experimental and involving a large expenditure of money, that wisdom may be gained whereby the highest results for these expenditures may be realized.

Respectfully submitted.

C. H. LATHAM,

C. K. RUSSELL,

WM. G. WARD,

H. P. PERKINS,

Committee on Evening Schools.

DRAWING.

This study has suffered in the Primary Schools for want of drawing cards and a manual of instruction. Some of the schools, however, have illustrated the truth of the maxim: "As is the teacher, so is the school," and these can, at the shortest notice, furnish specimens of their work that would do credit to scholars much farther advanced.

In the Grammar Schools very satisfactory progress has been made in consequence of the introduction of Mr. Walter Smith's Drawing-books, and the efficient supervision of the work by Mr. Harrison.

Miss Charlotte Draper has the charge of the drawing in the High School, and we are promised some excellent drawings for exhibition in the summer.

A class for the benefit of teachers was opened in the Green School hall in February and continued through April, with tolerable results. In November two classes were formed, one for Primary, the other for Grammar School teachers. A lesson of one hour is given to each class once in two weeks. There has been a much better attendance than in the spring, but the number of marks of absence on the roll is surprisingly large. Mr. Smith's methods, namely, drawing from the flat copy, dictation exercises, drawing from the blackboard, and the construction of original designs, can be best learned from a teacher who has been taught by Mr. Smith himself, and who has the requisite ability to impart his knowledge to others. A teacher that "*hates* drawing," calls it "a humbug," and thinks the time would be better spent on fractions and parsing, would necessarily find it an irksome task to devote an hour a fortnight to learning to teach drawing, even though that hour might be only one of the eight taken from the afternoon session of the school during the fortnight.

EVENING DRAWING SCHOOLS.

The attendance on the Drawing Schools cannot be as well ascertained as in other schools, as much of the work laid out is taken home, finished and returned. The number present in both of the rooms was smaller than the winter before, for reasons not satisfactorily ascertained. Considering the disadvantages the schools have labored under, the standing of the schools, at the exhibition in Boston, was very creditable. The whole number of drawings exhibited there was one hundred and one: Free-hand, thirty-four; instru-

mental, sixty-seven. There were awarded to Lowell three "excellents," six "honorable mentions," as follows:—

Mary E. Hardman,	Flat copy,	Honorable mention,	Free-hand.
F. C. Swann,	Original,	Excellent,	"
Thomas W. Gee,	"	Honorable mention,	"
S. G. Stevens,	Blackboard,	Excellent,	Mechanical.
John H. Guild,	"	"	"
Charles Runels (for set),	"	Honorable mention,	"
Charles Bridges,	"	"	Architectural.
N. H. Duganne,	Flat copy,	"	"

An exhibition of drawings from the public schools and from the art schools was held in the hall of the Green School-house, in June, and attracted quite a large attendance. The High School contributed a hundred selections; each Grammar School, twenty from the principal's room, and ten from each assistant's room; and the Primaries according to their abilities and inclinations. The free-hand department of the art schools, Mr. Harrison, teacher, contributed thirty very excellent drawings, and the instrumental department, Mr. Whitaker, teacher, contributed sixty-four. The display was a very fine one, and highly creditable to our city.

At the beginning of the term last year Mr. Whitaker offered prizes to the machine and architectural classes for the best complete sets of drawings finished in ink, each set to show all the work regularly laid before one class or the other. At the close of the exhibition the board of examiners, Messrs. James B. Francis, Oliver E. Cushing and Jacob H. Sawyer, examined the drawings and awarded the following prizes: In the machine class, to Samuel G. Stevens the first prize, of \$10; to Kirkley J. Hyde the second prize, of \$5. In the architectural class to J. P. Lewis the first prize, of \$10; to Charles Bridges the second prize, of \$5. The examiners thought the shaded drawings also worthy of notice, and upon comparing those not parts of sets compet-

ing for prizes, awarded to Miss Isabella Coburn, first honorable mention; to Miss Abbie R. Worthley, second honorable mention.

The expenditures on account of the Drawing Schools for the winter of 1872-3 were as follows:—

H. R. Barker & Co., fixtures and labor,	\$46.70
Sundry persons, advertising and printing,	86.25
Sundry persons, for models, chromos, flat copies, &c.,	63.75
Lowell Gas Light Company, gas,	240.66
Janitor,	82.00
Miscellaneous,	13.68
B. Harrison, for teaching, cash paid out for books, copies, &c.,	437.15
Channing Whitaker, for services of self and assistants (teaching), and for cash paid out for materials, and preparing diagrams,	1,515.17
Total,	<u>\$2,485.36</u>

The schools this year opened in November, in the same rooms and under the same teachers as last year. The free-hand class is, I am sorry to say, small. The instrumental classes are quite large. From Mr. Whitaker I have received the following

R E P O R T .

The beginners' class in architectural and machine drawing is the best organized class under my charge. Since the term began it has furnished instruction twice each week to one hundred and eleven persons. Eleven from this number have been transferred to other classes under my charge or to the free-hand class. Eight have been excused from handing in their drawings, either on account of sickness or absence from town, or other satisfactory reasons. Four have left the school. This leaves ninety-six persons members of this class, and eighty-eight persons who are expected to hand in complete sets of drawings. Thirty-four have sent in all the drawings expected from them; fourteen others have sent in all except one; fourteen others have sent in all except two; four others have sent in all except three—sixty-six in all, leaving twenty-two who have given no satisfactory reason for not sending in complete sets.

The occupations of scholars now in the beginners' class, and the number of scholars engaged in the same occupation, appear from the application papers to be as follows:—

Carpenters,	29
Machinists,	24
Clerks and Masons, each	6
Stone Cutters,	5
Mechanics,	3
Civil Engineers, Cabinet Makers, Pattern Makers and Packers, each	2
Students, Watch Makers, Coal Dealers, Painters, Sash and Blind Makers, Tinsmiths, Oil-house Keepers and Pressmen, each	1
The remaining 7 have not stated their occupation.	

I am usually governed by the following considerations in selecting a subject for any evening's lesson :

It should involve important general principles.

Those principles should be taught as means to an end, not as the end sought. They should be applied to that end during the lesson.

Lessons which can be finished in one evening are better than those that require more time for completion.

The length of each lesson should be found by trial previous to giving it to the class.

If a lesson can not be completed in a single evening, only so much of it as can be completed in one evening should be presented to the class in one lesson.

Assistants enough should be present in the class room so that no scholar shall be obliged to wait *more* than ten minutes before he can receive the information which is necessary to enable him to proceed understandingly.

Each lesson should be completed and handed in previous to the issuing of a new one.

On the receipt of a completed lesson, it should be faithfully examined. If it is correct, it should be placed on file. If incorrect, the error should be marked on the drawing, and the drawing returned for correction.

If the file of drawings due from any scholar be incomplete, the scholar should be notified of the fact as often as once a month, until the deficiency be made up, or until satisfactory reason be given for not making it up.

The number of scholars who have joined the different classes is as follows :—

Shades and Shadows,	36
Advanced Machine,	32
Advanced Architecturals,	24

The whole number of diagrams that have been made, up to the present time, is fifty-three.

The beginners' class have been making working drawings of bolts, screws, cams, sliders, bearings, friction rollers, trusses, mouldings, &c. In making these drawings they have learned to solve important problems in plane and descriptive geometry.

The advanced machine class have been upon the quarter turn of a turbine wheel, and its associate pieces.

The advanced architectural class have been engaged upon trusses, dormer windows, and a variety of work.

The class in shades and shadows have been upon the lights and shades of simple geometrical forms.

The beginners' class in working drawings have so far advanced that I have decided to divide them into two distinct divisions.

The machine division will take up the subject of "The Distribution of Power by Means of Belting." About *six* evenings will be devoted to *main driving pulleys*. By the courtesy of the Lowell Machine Shop, we are supplied with patterns of main driving pulleys.

The architectural division will take up the subject of *Civil Architecture*. About six evenings will be devoted to the *Tuscan Order* and its *practical application*. By the courtesy of the Massachusetts Institute of Technology we are supplied with models representing the Tuscan Order.

The class in shades and shadows have begun the representation by shade and shadow of an ivy leaf moulding. Through the courtesy of the Massachusetts Institute of Technology, we are supplied with a *plaster cast* representing the subject.

The advanced machine class will devote about six evenings to turbine bearings and stuffing boxes. The Swain Turbine Company kindly furnish us with patterns.

The advanced architectural class are engaged upon different subjects, based upon drawings and models loaned to the class by the Massachusetts Institute of Technology.

Gentlemen of the Committee, and others interested in art education, will be cordially welcomed by the teachers to Green School hall on any evening that the schools are in session.

CHARLES MORRILL,

Superintendent of Schools.

Report on Music.

The Committee on Music would herewith present their report concerning the department under their supervision for the year just closing.

No change has taken place in the method and manner of musical instruction in the schools during the past year. Vocal music is taught by the teacher of music one-half hour each week in the Grammar Schools, and ten minutes additional each day, except Wednesdays and Saturdays, by the regular teachers, under the direction of the teacher of music. The results from the small amount of time which is devoted to this branch of study have been great, and we should be pleased to find that our successors in office are enabled to allow of a greater amount of time being devoted to this pleasant and useful branch of study. At least we hope, and would earnestly recommend, that the study might be introduced into the Primary Schools, in some simple and pleasant form, believing that if this branch of study is ever to attain the excellence it deserves, and which we most certainly desire it should, that it should begin where all other elementary teaching does—in the Primary department.

A public examination of the scholars attending the Grammar Schools, was held in Huntington Hall, on Thursday, 22nd day of May. The lower classes were examined in the morning, and the upper classes in the afternoon. The inclement weather interfered somewhat with the attendance, but those who did attend, we feel confident in stating, were

amply repaid, in listening to the exercises upon that occasion. Some two thousand pupils were examined during the day, and the results were so satisfactory that we feel justified in recommending the establishment of the plan of a public examination in this form, as a permanent custom for future years. The examination was followed in the evening by a concert, given by a class of four hundred pupils from the High School and the upper classes of the Grammar Schools, assisted by an orchestra which furnished the accompaniments, besides rendering several selections during the evening. The hall was crowded with an appreciative and highly enthusiastic audience, among whom were visitors from Worcester and Lawrence, who were especially interested in this branch of study in their respective cities, and from whom your Committee received words of congratulation upon the success of the entertainment.

The want of suitable text-books, adapted to our plan of progressive musical instruction, has been felt for a series of years. This want has been supplied during the past year by the introduction of the Second and Third National Music Readers into the Grammar Schools, and the Fourth Music Reader into the High School, and from which we feel safe in predicting a much greater degree of proficiency in this branch of study than has heretofore been possible, under the former system, or rather *no system*, which has previously been in vogue. These new books contain a complete system of musical instruction, by which the pupil can progress gradually from one to the other as one would mount a ladder, and finally reach the highest point of perfection, while the music contained in them is of a high order, and is calculated to cultivate the taste, as well as to extend the knowledge and skill of the pupil.

We cannot close our report without testifying to the efficiency and enthusiastic devotion of the teacher of music, Mr. George F. Willey, who is heartily devoted to his occu-

pation, and who, we believe, is the "right man in the right place." We hope the city may, for the time to come, be enabled to have his services in the sphere which he has so ably filled in the years which are past; and should it be deemed expedient to raise the compensation of the teachers in the public schools during the ensuing year, we know of no place where the city could put its money "*where it will do the most good*" than by increasing the compensation of so competent and faithful a public servant as Mr. Willey has proved himself to be.

Respectfully submitted.

J. W. B. SHAW,
A. A. HAGGETT,
HENRY P. PERKINS,
WM. G. WARD,
C. K. RUSSELL.

LOWELL, December 27, 1873.

APPENDIX.

A.

SALARIES OF TEACHERS, BILLS, &c.

SECTION 1. The salaries of teachers for each school year are established as follows:

HIGH SCHOOL.

Principal,	\$2,500.00
First Male Assistant,	1,700.00
Second Male Assistant,	1,700.00
Female Assistants, first year,	650.00
“ “ second year,	700.00
“ “ after second year,	750.00

GRAMMAR SCHOOLS.

Principal,	\$1,700.00
“ of the Mann School,	2,000.00
“ of the Sherman School, first year,	600.00
“ “ “ second year,	700.00
“ “ “ after second year,	800.00
Assistants, first year,	400.00
“ second year,	450.00
“ third year,	500.00
“ after third year,	600.00
Teacher of Penmanship,	1,500.00
Teacher in Vocal Music,	1,500.00

PRIMARY SCHOOLS.

Teachers, first year,	\$400.00
“ second year,	450.00
“ third year,	500.00
“ after third year,	600.00

TEMPORARY TEACHERS.

Male Teachers, for every school-day's service,	\$3.00
Female Teachers in High School, for every school-day's service,	1.75
Female Teachers in other schools, for every school-day's service,	1.00
And after three months' continuous service,	1.25

SECT. 2. When a temporary teacher is employed for the full month, such teacher may charge for the whole number of school-days included in said month.

SECT. 3. Teachers' bills for services shall be payable monthly, as follows, viz: Upon the tenth day of October in each year, and thereafter upon the tenth day of each month succeeding to, and inclusive of, the tenth day of July next following. Each elected teacher shall present his bill to the Superintendent for his approval on the first day of the month in which said bill is payable, charging in his bill, for each month, one-tenth part of his salary, and deducting for every school-day that he is absent from duty, the proportional amount which such absence bears to the entire school-year, making allowance for no holidays not expressly mentioned in the second section of Chapter III; provided, that in case of absence on account of sickness, he shall receive his salary for a period not exceeding twenty-one days, less the amount actually paid during that time to a temporary teacher in his stead. Temporary teachers shall present their bills at the same time, charging for the number of school-days of actual service. Wednesday and Saturday forenoons shall be reckoned as whole days.

B.

TEXT-BOOKS USED IN THE PRIMARY SCHOOLS.

Hillard's Third Reader; Hillard's Second Reader; Hillard's Primer; Walton's Primary Arithmetic; Our World, by Miss Hall; Smith's Drawing Cards.

TEXT-BOOKS USED IN THE GRAMMAR SCHOOLS.

Greenleaf's and Eaton's Common School Arithmetics; Greene's Grammar; Our World, by Miss Hall; Guyot's Intermediate Geography; Anderson's Grammar School History of the United States; Hillard's Franklin Fifth Reader; Hillard's Intermediate Reader; Hillard's Third Reader; Worcester's Pronouncing Speller; Colburn's First Lessons in Arithmetic; Payson, Dunton & Scribner's Writing Books; Smith's Drawing Books; Hooker's Child's Book of Nature, permitted as a reading book.

TEXT-BOOKS USED IN THE HIGH SCHOOL.

Harkness' Latin Grammar; Harkness' Latin Reader; Harkness' Latin Composition; Hanson's Latin Prose; Hanson's Latin Poetry; Andrews' Latin Lexicon; Goodwin's Greek Grammar; Goodwin's Greek Reader; Crosby's Xenophon's Anabasis; Owen's Homer; Liddell & Scott's Greek Lexicon; Eaton's Arithmetic; Eaton's Algebra; Davies' Legendre's Geometry; Davies' Legendre's Trigonometry; Davies' Surveying; Magill's French Grammar; Magill's French Reader; College Plays, by Bocher; Spier's French Dictionary; Berard's History of England; Smith's Smaller History of Greece; Anderson's Bloss' Ancient History; Greene's English Grammar; Hart's Composition and Rhetoric; Underwood's Handbook of English Literature; Alden's Science of Government; Winslow's Intellectual Philosophy; Wayland's Moral Science;

Hooker's Natural History; Quackenbos' Natural Philosophy; Steele's Chemistry; Kiddle's Astronomy; Tenney's Geology; Wood's Botany; Dalton's Physiology; Warren's Physical Geography; Mitchell's Ancient Geography; Fourth Music Reader; Webster's and Worcester's Dictionaries; Otto's German Grammar and Reader.

C.

COURSE OF STUDY FOR THE PRIMARY SCHOOLS.

FIRST YEAR.

Sixth Class—*First Reader, to page 30. Commence by using letter and word cards, and Hillard's Reading Charts, Nos. 1, 2, 3 and 4.

Spell the words in columns, by letters and by sounds.

Develop the idea of number to ten, by the use of objects. Count to one hundred on the numeral frame.

Teach the construction of letters and figures critically, using slate and blackboard.

Fifth Class—First Reader completed. Spell as in Sixth Class, using Charts, Nos. 2, 5, 6, 7, and 8.

Teach Roman numerals to L.

Print words and figures.

Add and subtract small numbers, using the numeral frame.

SECOND YEAR.

Fourth Class—Second Reader, to page 57. Practice "Enunciation Exercises," daily.

Spell, by letters and by sounds, words in columns and in reading lessons.

Teach the simplest form of script letters.

Teach Arithmetic orally, to page 20.

Third Class—Second Reader completed, and Third Reader commenced. Practice "Enunciation Exercises" as in the Fourth Class. Table of numbers on page 11, and marks used in printing on page 12, to be learned.

Teach the simplest form of script letters.

Teach Arithmetic to page 40, and the Multiplication Table to 6 x 6.

THIRD YEAR.

Second Class—Third Reader to page 57. Daily practice of exercises in enunciation to "Terminal Combinations." Spell words in columns and in reading lessons, by letters and by sounds. * Teach the meaning of the words found in the reading lessons, and require scholars to use their own language in defining. Correct all faults in expression.

Miss Hall's Geography, "Our World," to be commenced as a reading book.

*Leigh's Sound-Charts, and Pronouncing edition of Hillard's Primer and Second Reader are recommended for the Sixth and Fifth Classes.

Teach all the script letters, and require short words to be written from dictation.

Review the Arithmetic and go to page 61.

First Class—Third Reader, to page 125. Exercises in enunciation, spelling, definitions, &c., as in second class.

“Our World” continued as a reader.

Write three words of each spelling lesson, and criticise carefully the form of each letter; also, encourage the writing of short sentences.

Review and complete the Arithmetic, omitting from the 74th to the 87th page, inclusive.

Drawing should be taught in all the classes except the sixth.

In each school a few minutes should be devoted, at every session, to singing, physical exercises, lessons on objects, and repeating verses and maxims.

D.

COURSE OF STUDY FOR THE GRAMMAR SCHOOLS.

FIRST YEAR.

Eighth Class—Hillard’s Third Reader. Especial attention should be given to the Introductory Exercises, and to the lessons in Spelling and Defining at the beginning of each reading lesson.

Worcester’s Pronouncing Speller to page 50.

“Our World,” to be used chiefly as a reading book; oral teaching of Geography from wall maps.

Colburn’s First Lessons in Arithmetic to sec. 4, page 63, omitting the last 52 questions in sec. 3, C.

Written Arithmetic, from dictation, Numeration and Notation, Addition and Multiplication; amounts not to exceed a million.

Seventh Class—Hillard’s Intermediate Reader; Introductory Exercises, Spelling and Defining as in Eighth Class.

Worcester’s Pronouncing Speller to page 60.

Guyot’s Intermediate Geography, to South America.

Colburn’s First Lessons, sections 4, 5 and 6, and 50 questions in sec. 3, C.

Written Arithmetic, from dictation, Numeration and Notation, Addition and Multiplication, Subtraction and Long Division, not to exceed three periods. In Subtraction not more than two figures in the minuend to be less than the figures below them, and in Division the divisor not to exceed 25.

SECOND YEAR.

Sixth Class—Hillard’s Intermediate Reader,* Spelling and Defining, and Introductory Exercises, as far as Inflection.

* Child’s Book of Nature permitted as a reading book, to alternate with the Intermediate Reader, in the Sixth, Fifth, Fourth and Third Classes.

Worcester's Pronouncing Speller, from page 60 to page 78.

Guyot's Intermediate Geography, from South America to Africa, and Exact Geographical position on pages 85, 86 and 87.

Colburn's First Lessons, from C, in sec. 6, to sec. 9, page 94, with 70 questions in C, sec. 3.

Eaton's Common School Arithmetic to Reduction, omitting Numeration and Notation of numbers above units of billions, and Numeration and Notation after the English method.

Fifth Class—Hillard's Intermediate Reader* continued to page 32, with daily drill on the Introductory Exercises.

Worcester's Pronouncing Speller, from page 78 to page 95.

Guyot's Intermediate Geography, Africa, Australia and Asia, to page 43, with review as needed.

Colburn's First Lessons, sections 9, 10 and 11, and C, section 3.

Eaton's Common School Arithmetic to Common Fractions.

THIRD YEAR.

Fourth Class—Hillard's Intermediate Reader* continued. Daily drill as in Fifth Class.

Worcester's Pronouncing Speller from page 95 to page 120; oral and written exercises.

Guyot's Intermediate Geography, Europe and United States to page 57, and Exact Geographical position on pages 85, 86, 87.

Colburn's First Lessons, sections 12, 13, 14 and C, sec. 3.

Greenleaf's Common School Arithmetic, from Properties of Numbers, page 130 to page 165, and review of Miscellaneous Questions on page 119, or Eaton's, from Common to Decimal Fractions.

Greene's Introduction to the Study of English Grammar, to Part II, page 54.

Third Class—Hillard's Intermediate Reader* completed and thoroughly reviewed.

Worcester's Pronouncing Speller, from page 120 to page 131; oral and written exercises.

Guyot's Intermediate Geography, from page 57 to page 71; review preceding maps, and Exact Geographical position.

Colburn's First Lessons, B and C, sec. 4; A and B, sec. 7; miscellaneous examples in sections 6, 11 and 12, and review sec. 14.

Greenleaf's Common School Arithmetic, from page 165 to page 205, omitting sections 167, 168, 173 and 174, or Eaton's, from Decimal Fractions to Percentage.

Greene's Grammar, from Part II, page 54, to Syntax, page 131.

Anderson's Grammar School History, as a reading book, and to be taught "by reading and familiar conversation," to page 53; few dates to be memorized.

FOURTH YEAR.

Second Class—Hillard's Franklin Fifth Reader; systematic teaching of the Introductory Treatise, and reading lessons to Lesson XLV, page 177.

Worcester's Pronouncing Speller, from page 131 to page 137, and review select lessons to page 100.

* Child's Book of Nature permitted as a reading book, to alternate with the Intermediate Reader, in the Sixth, Fifth, Fourth and Third Classes.

Guyot's Intermediate Geography completed, and maps of the New England and Middle Atlantic States reviewed.

Colburn's First Lessons, discretionary in reference to section 15; review of the book as required by the Rules.

Greenleaf's Common School Arithmetic, from page 165 to page 225, section 224, omitting sections 167, 168, 173, 174, 201 and 202; or Eatou's from Percentage to Ratio, omitting the same as is omitted in Greenleaf's.

Greene's Grammar, from page 131 to the end.

Anderson's Grammar School History, from the beginning to the close of the Revolutionary War, on page 106.

FIFTH YEAR.

First Class—Hillard's Franklin Fifth Reader completed and reviewed.

Worcester's Pronouncing Speller; the whole book reviewed.

Guyot's Intermediate Geography thoroughly reviewed; the drawings of maps to be *rapid* as well as *accurate*.

Colburn's First Lessons; daily exercises as required by the Rules.

Greenleaf's or Eaton's Common School Arithmetic finished and reviewed; omit Custom-house Business, Assessment of Taxes, Equation of Payments, Currencies, Exchange, Duodecimals, Progression, Alligation, Permutation, and Mensuration of Solids.

Greene's Grammar finished and reviewed.

Anderson's Grammar School History finished and reviewed.

Composition, Writing, Drawing and Music through the whole course.

Declamation by the boys in the first and second classes once a month.

E.

COURSE OF STUDY FOR THE HIGH SCHOOL.

ENGLISH COURSE.

FIRST YEAR. *First Half*—Algebra, Mental Arithmetic, Ancient History, Natural History. *Second Half*—Algebra, English History, Natural Philosophy.

SECOND YEAR. *First Half*—Geometry, Physical Geography, Natural Philosophy. *Second Half*—Geometry, Chemistry, English Grammar, English Literature.

THIRD YEAR. *First Half*—Geology, Arithmetic, Physiology. *Second Half*—Astronomy, Political Science, Rhetoric or Botany.

FOURTH YEAR. (Optional.) *First Half*—Intellectual Philosophy, English Literature, and either French, German or Latin. *Second Half*—Botany, Moral Philosophy, English Literature, and either French, German or Latin.

Composition, Declamation, Reading, Drawing and Music through the course. French, German, Latin, Trigonometry and Surveying, are optional in the *Three Years' Course*.

CLASSICAL COURSE.

FIRST YEAR. *First Half*—Latin Grammar and Reader, Algebra. *Second Half*—Latin Grammar and Reader, Algebra and Natural Philosophy.

SECOND YEAR. *First Half*—Cæsar, Geometry, Natural Philosophy. *Second Half*—Cæsar, Greek Grammar and Reader.

THIRD YEAR. *First Half*—Virgil, Anabasis. *Second Half*—Virgil, Anabasis.

FOURTH YEAR. *First Half*—Cicero, Homer. *Second Half*—Cicero, Homer, and review of the course.

OPTIONAL STUDIES. French through the course. Trigonometry and Surveying in the *third* year.

F.

SERIES OF QUESTIONS PROPOSED FOR THE
EXAMINATION OF APPLICANTS TO
ENTER THE HIGH SCHOOL.

QUESTIONS IN HISTORY.

1. What were the chief events of the French and Indian War?
2. From whom was the Louisiana purchase made? and what did it comprise?
3. What were the two most important Indian wars in New England? and where did they occur?
4. State what you can of the settlement of Providence, R. I.
5. What colonies united for protection in King Philip's reign?
6. How did the Plymouth settlers acquire a title to their lands?
7. Give some of the causes of the Revolution; and
8. Name four distinguished Generals on the American side.
9. What can you say of Washington's army during the winter of 1777-8?
10. Mention some of the terms of the treaty of peace signed at Paris at the close of the American Revolution.
11. When and where was Washington inaugurated President?
12. Give some of the causes of the second war with England?
13. What was the first hostile movement on the part of the Americans?
14. What was the principal cause of the war with Mexico?
15. Mention four important battles fought during the Mexican war, and give an account of *one* of them.
16. In the interest of what religious sect were the following colonies settled?
Plymouth—
Pennsylvania—
Virginia—
Maryland—
17. For what will Lincoln's administration be noted?

18. Mention some of the *decisive* battles of the Civil War.
19. How were the territorial possessions of the United States greatly enlarged in 1867?
20. Name the Presidents of the United States, in the order of their election?

QUESTIONS IN GEOGRAPHY.

1. Define a river basin.
2. What name is given to a stream which flows into another one?
3. Where are Capes Gallinas, and Horn?
4. Name the countries between them on the Atlantic coast, beginning with the most northern.
5. Where are the Antilles, and what are their exports?
6. What stream carries the waters of the three great northern lakes of North America to the ocean?
7. Name the five largest cities of the Atlantic coast of North America.
8. Name the four great systems of lakes and rivers of North America.
9. What is the most northern cape of Africa?
10. What is the extent of the Sahara, from north to south?
11. Name the six countries comprising the western part of Asia.
12. Bound Delaware.
13. In what part of Europe are nearly all its mountains?
14. Name the countries of Europe which touch the Mediterranean Sea, beginning at the most eastern.
15. What and where is the capital of Italy?
16. Describe the form of Florida.
17. Name the four largest cities of New Hampshire.
18. Locate the following cities:—Cleveland, St. Petersburg, Canton, Cape Town, Khartoom.
19. What is the use of the *parallels*? of the *meridians*?
20. Draw a map of New Hampshire and Vermont.

QUESTIONS IN GRAMMAR.

¹*Yes*, ²*reader*, ³*countless* are the mysterious handwritings of grief or joy ⁴*which* have inscribed themselves upon the palimpsest of your brain; ⁵*and* ⁶*like* the annual leaves of aboriginal forests, or the ⁷*undissolving* ⁸*snows* of the Himalaya, or light ⁹*falling* upon light, the endless ¹⁰*strata* have covered ¹¹*up* ¹²*each other* in forgetfulness. But ¹³*by* the hour of death, but by fever, but by the searchings of opium, all ¹⁴*these* can revive in strength; they are not dead, but sleeping.

1. Parse *yes*.
2. Parse *reader*.
3. Parse *countless*.
4. What is the antecedent of *which*?
5. What two sentences does *and* connect?
6. Parse *like*.
7. Parse *undissolving*.
8. Parse *snows*.

9. Give the principal parts of *falling*, and name its three participles.
10. What is the singular number of *strata*?
11. Parse *up*.
12. How do you dispose of *each other*?
13. What two words does *by* connect?
14. To what does *these* refer?
15. Give the synopsis of *can revive* in the active voice, indicative and potential moods, first person, singular number.
16. In what do *adjectives* and *adverbs* differ?
17. Give an example of an *interrogative sentence*, and one of an *exclamatory sentence*.
18. Decline the personal pronoun *thou*.
19. Give an example of an *irregular transitive verb*; of a *regular intransitive verb*; and of a *defective verb*, each in the *past tense*.
20. Transform the following lines:

“ Then, kneeling down, to Heaven’s eternal King
The saint, the husband, and the father prays.”

QUESTIONS IN ARITHMETIC.

1. Subtract three and seven-eighths from ninety and one-fourth; first by common fractions, then by decimals.
2. $\frac{12}{\frac{3}{7}} + \frac{2}{9} - \frac{1}{7} =$ what?
3. What is the sum of four thousand, and forty-four hundredths; six hundred and six millions, and six-tenths; twenty-four thousand four hundred and five, and seven hundred-millionths; and twenty thousand and ten?
4. A commission merchant sells goods amounting to \$7,896, at a commission of $2\frac{1}{2}$ per cent. What is the amount of his commission?
5. In the number 6742.553, the 3 expresses what part as much as the 6?
6. A received of B \$18 for the use of \$1200 for six months: now B wishes to hire of A \$1800 until the interest shall amount to the same sum. For how long must he have it.
7. I have John Smith’s note for \$400, dated June 7th, 1870. What was due July 1, 1873?
8. Find the cube root of 74.088.
9. A certain number being taken from $22\frac{1}{2}$, and the remainder multiplied by 6, the product was 23. What was the number?
10. How many shingles will it take to cover a roof, each of whose equal sides is 36 feet long, with rafters 16 feet in length, supposing one shingle to cover $\frac{3}{16}$ of a square foot?
11. Paid \$2178.00 for five acres of land, and sold it at 2 cents a square foot. How much did I make by my bargain?
12. Reduce $\frac{1}{26}\frac{1}{40}$ of a furlong to the fraction of a foot.
13. Reduce $\frac{3}{8}$ of $\frac{1}{3}\frac{1}{4}$ of $\frac{7}{30}$ of $\frac{1}{2}\frac{1}{1}$ of $\frac{2}{5}$ to a simple fraction, by cancellation.
14. What is *percentage*? Write, in figures, *two and one-half per cent.*, *one-fourth per cent.*, and *five hundred per cent.*
15. What are the avails of a note of \$596.24 payable in 8 months and 9 days, discounted at a bank at 8 per cent.?

16. J. Lawton has two square house lots; the first is 242 feet square, and the second contains 9 times the area of the first. How many feet square is the second?

17. What part of $\frac{7}{8}$ is $\frac{5}{6}$?

18. Find the least common multiple of 4, 5, 6 and 24.

19. Bought 13 gross of steel pens at $2\frac{1}{2}$ cents a pen, and 12 reams of paper at 20 cents a quire. What was the amount of my bill?

20. Divide 7080.1 by .0101.

SPELLING.

Accede, engineer, fallacy, sinewy, courtesy, thralldom, elixir, emissary, intelligible, negotiable, inveigle, derivative, instalment, crevice, treatise, reprehensible, eligible, phoenix, besieged, penance.

G.

LIST OF APPROVED CANDIDATES FOR SITUATIONS AS
TEACHERS. EXAMINED FEB. 20, 1873.

NAME.	EXPERIENCE.	EDUCATED AT
Sarah E. Stevenson, . .	None.	{ Lowell Schools. Salem Normal School.
Sarah Dora Thurston, .	None.	{ Newburyport High School. Salem Normal School.
*Laura E. Lee,	None.	{ Lowell High School. Salem Normal School.
Leona C. Kyle, . . .	None.	Salem Normal School.
*Elizabeth A. Balch, . .	None.	{ Lowell High School. Salem Normal School.
Minora C. Joy, . . .	21 terms.	Townsend, Vt.
*Abbie L. Sargent, . .	2 months.	Salem Normal School.
*Frances E. Hardman, .	None.	Lowell Schools.
Belle C. Hill,	3 months.	Lowell Schools.
Clementine H. Bowers,	None.	{ Lowell High School. Salem Normal School.
Abbie E. French, . . .	None.	{ Lowell High School. Salem Normal School.
Addie A. Godfrey, . .	6 weeks.	Lowell Schools.
Ellen A. Stillings, . .	Evening Schools.	Lowell High School.
Mary E. Frye,	2 terms.	Groton.
Lizzie A. Nolan, . . .	None.	{ Lowell Schools. Salem Normal School.
Sarah J. Gilman, . . .	Evening Schools.	{ Lowell Schools. Salem Normal School.
Mary C. Hyde,	None.	{ Lowell Schools. Salem Normal School.
Maria W. Roberts, . .	None.	Lowell.
Mary E. Stone,	22 weeks.	{ Lowell Schools. Bridgewater Normal School.
Frances N. Goodall, . .	None.	High School, Portsmouth.
*Alice M. Healey, . . .	None.	{ Lowell Schools. Salem Normal School.

Certificates of qualifications to teach were renewed to the following teachers :

Gertrude Sheldon,	*Annie S. Harlow,	*Alice L. Frye,
*Julia Leighton,	Ella P. Pray,	Ella S. Hodgdon,
*Mary I. Howe,	*Helen A. Bowers,	Frances E. Morrill,
Lucy J. Freeman,	Annie C. Howe,	*Anna F. Peabody,
Martha A. Paul,	Frances Horne,	Ida B. Cheney,
Grace L. Sargent,	*Mary E. Hardman,	Mary E. Rogers,
Ellen E. Merithew,	Mary P. White,	*Frances M. Webster.
	Belle T. Vinal,	

Some of the above candidates are not applicants for schools. *Elected to schools during the year.

H.

NAMES OF HIGH AND GRAMMAR SCHOOL TEACHERS,

THEIR SCHOOLS, DATE OF ELECTION, SALARIES AND RESIDENCES.

Jan. 1, 1874. SCHOOLS.	TEACHERS.	ELECTED.	SALARIES.	RESIDENCES.
High.....	Chas. C. Chase, Principal,	1845	\$2,200	9 Nesmith street.
	Edwin H. Lord.....	1873	1,700	10 Nesmith street.
	James S. Russell.....	1835	1,700	29 Nesmith street.
	Mary A. Webster.....	1860	750	Cor. Sixth & Myrtle sts.
	Marietta Melvin.....	1859	750	381 Merrimack street.
	Elizabeth McDaniels.....	1868	750	E. Merrimack street.
	Harriet C. Hovey.....	1870	750	8 Fourth street, (Cen.)
	Charlotte E. Draper.....	1870	750	Worthen st., cor. Bro'y.
<i>Grammar Sch's.</i> Bartlett.....	Samuel Bement, Principal	1851	1,700	428 Merrimack street.
	Marianne B. Kent.....	1859	600	428 Merrimack street.
	Mary E. Pike.....	1848	600	49 Third street, (Cen.)
	Cemantna R. Nichols.....	1867	600	Cor. Paw'ket & Salem.
	M. Ida Howe.....	1873	450	22 Third street, (Cen.)
	Mary C. Gardner.....	1860	600	Mt. Wash'n near Var'y.
	Sophia P. Wetherbee.....	1847	600	19 Kirk street.
	Caroline E. Holt.....	1856	600	430 Merrimack street.
Colburn.....	Perley Balch, Principal...	1871	1,700	8 Favor street.
	Elizabeth W. Frost.....	1857	600	35 Bartlett street.
	Susan A. Andrews.....	1864	600	33 Walnut street.
	Sarah J. Crosby.....	1868	600	133 Gorham street.
	Emma C. Sawyer.....	1867	600	252 Central street.
	Arvilla L. Reader.....	1871	600	74 Appleton street.
	C. W. Burbank, Principal,	1872	1,700	9 Coral street.
	Helen A. Bowers.....	1873	400	56 Tyler street.
Edson.....	Maria C. R. Swan.....	1862	600	12 Adams street.
	Anna A. Sargent.....	1864	600	248 Gorham street.
	Mary F. Carleton.....	1856	600	18 Chapel street.
	Fanny A. Scripture.....	1873	450	227 Central street.
	Olive W. Beane.....	1860	600	10 Queen street.
	Mary A. Balch.....	1865	600	8 Favor street.
	S. G. Bailey, Principal....	1870	1,700	Walker n'r Pawtucket.
	Sarah E. French.....	1867	600	1 Butterfield street.
Franklin.....	Abbie F. Woodward.....	1869	600	26 Race street.
	Emma L. Crosby.....	1869	600	133 Gorham street.
	Luella A. Wardwell.....	1870	600	12 East Pine street.
	Geo. F. Lawton, Principal,	1868	1,700	24 Stackpole street.
	Ida A. Hill.....	1870	600	7 Cabot street.
	Ruth B. Bailey.....	1871	500	51 Hanover street.
	Nettie E. Carleton.....	1867	600	18 Chapel street.
	Ida Sheldon.....	1871	500	35 Howard street.
Green.....	Ellen S. Burrill.....	1860	600	1 Lawrence Corporat'n.
	Emma L. Pevey.....	1868	600	Cor. Paw'ket & Salem.
	Anna E. Richardson.....	1871	600	Cor. Paw'ket & Salem.
	Emily A. Howe.....	1871	450	22 Third street.
	*Nellie M. Gallagher.....	1868	800	56 Bartlett street.
	Laura F. Howe.....	1856	600	11 Ash street.
	Celestia P. Chase.....	1867	600	7 Tilden street.
	Julia M. Healey.....	1870	600	45 Worthen street.
Mann.....	Frances M. Webster.....	1873	400	Cor. Sixth & Myrtle sts.
	Joseph Peabody, Princip'l	1856	1,700	116 Appleton street.
	S. Elizabeth Dean.....	1867	600	7 Tyler street.
	Mary E. Hardman.....	1873	600	34 Merrimack Corpor'n.
	Helen A. Haggett.....	1865	600	8 High street.
	Laura J. Pindar.....	1856	600	35 Tyler street.
	Sarah E. Bailey.....	1856	600	46 High street.
	Mary E. Way.....	1858	600	22 Tyler street.
Moody.....	Frances E. Hardman.....	1873	400	34 Merrimack Corpor'n.
	Cornelia Davis.....	1873	700	11 Willow street.
	D. P. Galloupe, Principal,	1853	1,700	Methuen street.
	Georgiana F. Vinton.....	1872	450	Richardson st., (Cen.)
	Harriet Bradley.....	1854	600	20 Fourth street.
	Sarah F. Dillingham.....	1870	600	Bridge, n'r Fifth, (Cen.)
	Sarah A. Bradley.....	1857	600	11 Third street.
	Clara A. Hannaford.....	1869	600	Bridge, n'r Fifth, (Cen.)
Sherman..... Varnum.....	†B. Harrison.....	1865	1,500	Arlington street.
	†George F. Willey.....	1866	1,500	32 Appleton street.

*Acting Principal

†Teacher of Penmanship and Book-keeping in High and Grammar Schools.

‡Teacher of Vocal Music in High and Grammar Schools.

NAMES OF PRIMARY SCHOOL TEACHERS,

THEIR SCHOOLS, DATE OF ELECTION, SALARIES AND RESIDENCES.

SCHOOLS.	TEACHERS.	ELECTED.	SALARIES.	RESIDENCES.
Primary No	2.... Annie S. Harlow.....	1873	\$400	Pawtucket street.
	3.... Abbie G. Watson	1869	600	Chelmsford street.
	4.... Lucy F. Carleton.....	1855	600	18 Chapel street.
	5.... Elizabeth A. Stearns..	1854	600	47 Tyler street.
	6.... Anna F. Peabody.....	1873	450	116 Appleton street.
	7.... Mary J. Rice	1867	600	2 Tyler street.
	8.... Mariha A. Franklin...	1866	600	Vernon street, (Cen.)
	9.... Martha S. Williams...	1854	600	248 Central street.
	10.... Martha A. Neal	1847	600	12 Dodge street.
	11.... Bella V. McAnulty....	1867	600	5 Hurd street.
	12.... Eliza Merriam	1838	600	125 Moody street.
	13.... Cornelia M. Davis	1871	500	34 Rock street.
	14.... S. Augusta Haggett....	1870	600	8 High street.
	15.... Abbie R. Wortley....	1871	600	41 Appleton street.
	16.... Marietta Hill	1870	600	Fairmount street.
	17.... Sarah C. Fiske	1866	600	100 Appleton street.
	18.... Ella Cowley.....	1857	600	154 Lawrence street.
	19.... Lizzie N. Smith	1871	500	62 Lawrence street.
	20.... Susie J. Perkins	1871	500	180 Gorham street.
	21.... Nellie F. Baker	1872	450	39 Adams street.
	22.... Ella E. Gardner.....	1871	500	Mt. Washington street.
	23.... Alice M. Healey	1873	400	Prono street.
	24.... Ellen A. Bridge.....	1857	600	54 Howard street.
	25.... Aurelia L. Howe	1844	600	11 Ash street.
	26.... Charlotte E. Brown....	1870	600	31 Suffolk street.
	27.... Mary E. Drew	1868	600	24 Wamesit street.
	28.... Emily M. Warren.	1842	600	Chelm'd & Howard sts.
	29.... Jennie C. Woodward .	1871	500	26 Race street.
	30.... Alice L. Frye.....	1873	450	Tanner street.
	31.... Elizabeth A. Balch....	1873	400	125 E. Merrimack street.
	32.... Ellen F. Coughlan....	1853	600	11 Austin street.
	33.... Amanda M. Hadley....	1870	600	8 Russell's B'k, Suff'k st.
	34.... Lizzie L. Lowe	1857	600	2 Nichols street.
	35.... Clara A. Emerson	1869	600	64 Andover street.
	36.... Mary A. Beard	1844	600	Coral and Grove streets
	37.... Lucretia A. Day	1861	600	246 Central street.
	38.... Mary O. Kidder	1865	600	143 Moody street.
	39.... Abby L. Sargent.....	1873	400	14 Stackpole street.
	40.... Sarah E. Scales	1866	600	80 South street.
	41.... Lilla S. Greenhalge....	1871	500	35 Worthen street.
	42.... Lizzie M. Hadley	1869	600	1 Cheever street.
	43.... Nellie M. Brown	1865	600	31 Suffolk street.
	44.... Mary L. Hill	1858	600	40 Worthen street.
	45.... Ellen M. White.....	1863	600	21 Oak street.
	46.... Ella A. Bailey	1869	600	26 Third street, (Cen.)
	47.... Miranda W. Bradley....	1852	600	30 Fourth street, (Cen.)
	48.... Marion A. Scott.....	1870	600	Third, cor. Frent. (Cen.)
	49.... Marcella M. Patten....	1868	600	46 Third street, (Cen.)
	50.... Julia Leighton	1873	400	Cor. Moore & Bleachery
	51.... Mary J. Alger	1868	600	3 Oak street.
	52.... H. Maria Mansur	1870	600	11 Tyler street.
	53.... Sarah L. Gates.....	1845	600	34 Walnut street.
	54.... Abby D. Gates	1854	600	34 Walnut street.
	55.... Ella S. Stanwood.....	1871	500	25 Bridge street.
	56.... Laura E. Lee.....	1873	400	Grand street.

SUMMARY OF THE ANNUAL RETURNS

OF THE

PUBLIC SCHOOLS OF THE CITY OF LOWELL,

FOR THE YEAR ENDING DECEMBER 30, 1873.

SCHOOL.	LOCATION.	No. of pupils belonging, December 31, 1873.			Whole No. of pupils on time-book since Jan. 1, 1873.			Average No. of pupils belonging to school.			Average daily Attendance.			No. entered not rec'd from any other public school.	Received from other public schools of lower grade.	Received from other public schools of same grade.	Sent to other public schools of same grade.	Sent to other public schools of higher grade.	No. having legal certificates of schooling for mills.	Over fifteen years of age December 31, 1873.	Between ten and fifteen years of age December 31, 1873.	Under six years of age December 31, 1873.	Per cent. of attendance.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.										
High.....	Anne and Kirk streets.....	124	141	265	187	199	386	114	144	258	112	141	253	4	117	0	0	0	0	196	69	0	88
Grammar.																							
Bartlett.....	Clark street.....	173	154	327	238	209	447	166	154	320	150	137	287	19	61	15	23	24	16	27	254	0	90
Colburn	Lawrence street.....	178	135	313	298	225	523	143	113	256	130	97	227	32	153	20	15	9	121	9	231	0	90
Edson	Highland street.....	197	185	382	335	341	676	181	178	359	172	158	330	42	106	34	19	23	36	293	0	92	
Franklin.....	Branch street.....	92	125	217	133	163	296	88	117	205	81	108	189	18	40	7	11	16	3	15	208	0	91
Green.....	Merrimack street.....	178	178	356	271	280	551	162	168	330	150	169	319	46	68	19	10	23	19	29	272	0	91
Mann.....	Lewis street.....	151	34	185	260	60	320	144	39	183	132	33	165	24	69	10	5	3	82	14	223	0	90
Moody.....	High and E. Merrimack sts...	141	186	327	261	284	545	149	175	324	135	161	296	18	92	24	15	25	23	8	319	0	91
Sherman.....	Powell street.....	28	20	48	43	22	65	24	17	41	23	15	38	2	10	4	6	0	8	3	36	0	92
Varnum	Myrtle street, (Centralville)...	130	114	244	187	170	357	129	108	237	113	98	211	25	57	8	8	14	31	10	170	0	89
Totals.....	Totals.....	1208	1131	2339	2026	1754	3780	1186	1089	2275	1086	976	2062	226	656	141	112	137	306	150	1906	0	91

Primaries.

(No. 4.....		29	21	50	44	88	22	23	45	20	20	40	10	39	3	6	16	0	0	12	0	89
7.....		27	27	54	56	123	91	25	21	22	21	43	40	20	40	22	29	4	4	10	0	92
8.....		26	19	45	50	123	25	21	46	23	19	42	12	9	20	7	6	4	0	9	0	91
9.....		25	26	51	52	108	24	27	51	26	16	47	13	32	7	13	28	2	0	13	0	92
12.....		26	21	47	53	115	28	18	46	26	15	42	17	41	4	20	28	5	0	12	0	92
15.....		23	20	43	71	128	24	18	42	22	16	38	17	31	25	29	38	9	0	11	0	90
18.....		31	24	55	64	112	27	22	49	25	18	44	12	18	24	30	16	2	0	9	0	90
19.....		30	24	54	64	102	28	24	52	27	22	44	12	18	4	8	30	6	0	16	0	94
20.....		29	23	52	48	95	28	21	52	26	21	47	2	32	3	7	31	1	0	4	0	90
23.....		20	28	48	38	82	18	19	37	17	17	34	12	20	7	4	23	2	0	12	0	92
30.....		24	19	43	61	118	23	19	42	21	17	38	10	33	38	26	27	6	0	13	0	90
35.....		37	29	66	58	123	29	21	50	25	17	42	50	6	25	34	21	2	0	2	23	84
37.....		24	17	51	55	107	23	19	42	21	17	38	10	29	22	26	6	0	0	13	0	90
40.....		18	17	35	40	90	22	19	41	20	17	37	8	19	6	9	26	0	0	5	0	90
47.....		22	26	48	40	91	22	23	45	20	21	41	3	38	2	5	30	0	0	2	0	91
48.....		20	23	43	39	71	25	22	47	22	19	41	2	25	16	7	19	4	0	5	0	92
Totals.....		411	374	785	850	1644	391	343	734	360	303	663	198	416	246	233	395	61	0	148	23	90

Primaries.

(No. 54.....		25	23	48	60	107	25	21	46	23	20	43	50	0	12	9	36	0	0	0	17	93
21.....		27	28	55	59	121	26	28	54	25	26	51	46	0	34	32	16	0	0	4	12	93
29.....		35	18	53	76	126	32	15	47	29	13	42	41	0	16	29	16	1	0	2	21	90
51.....		31	25	56	69	136	26	24	50	24	22	46	43	0	23	24	33	0	1	1	18	92
23.....		30	25	55	70	144	24	23	46	21	19	40	60	0	23	11	37	1	0	4	23	87
6.....		29	23	52	65	117	24	20	44	23	17	39	67	0	20	20	33	1	0	3	15	89
53.....		31	22	53	55	133	24	24	48	19	22	41	26	0	19	18	23	0	0	2	12	85
39.....		34	25	59	68	126	31	23	51	29	19	48	40	0	10	9	28	2	0	0	18	89
13.....		38	28	66	67	118	35	28	63	33	26	59	44	0	6	6	39	0	0	1	23	94
14.....		28	22	50	48	104	25	24	49	22	20	42	41	0	4	8	24	0	0	0	30	86
5.....		24	23	47	55	117	18	20	38	17	19	36	45	0	30	9	28	0	0	1	15	94
52.....		20	35	45	62	108	18	29	47	16	26	42	32	0	28	5	28	1	0	0	15	89
16.....		39	32	71	77	141	32	24	56	30	22	52	58	0	13	23	18	4	0	8	14	93
45.....		20	15	35	46	86	19	16	35	17	14	31	77	0	9	10	20	0	0	0	8	89
46.....		28	34	62	48	103	24	24	48	21	20	41	41	0	6	1	38	1	0	0	15	85
55.....		31	20	51	63	110	27	15	42	25	12	37	37	0	10	6	25	2	0	0	0	90
Totals.....		470	398	868	972	1897	410	357	767	373	317	690	748	0	263	220	442	13	1	27	241	90

Lower Grade.

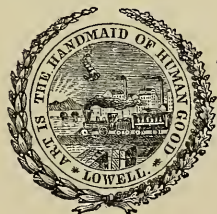
Summary of the Annual Returns of the Public Schools—Continued.

SCHOOL.	LOCATION.	No. of pupils belonging, December 31, 1873.			Whole No. of pupils on time-book since Jan. 1, 1873.			Average No. of pupils belonging to school.			Average daily Attendance.			No. entered not rec'd from any other public school.	Received from other public schools of lower grade.	Received from other public schools of same grade.	Sent to other public schools of same grade.	Sent to other public schools of higher grade.	No. having legal certificates of schooling for mills.	Over fifteen years of age December 31, 1873.	Between ten and fifteen years of age December 31, 1873.	Under six years of age December 31, 1873.	Per cent. of attendance.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.										
Primaries. Ungraded. { No. 2..... 3..... 24..... 28..... 31..... 32..... 49.....	School street.....	26	20	46	38	37	75	21	19	40	18	16	34	13	0	11	1	8	0	4	6	98	
	Paige street.....	28	32	60	60	54	114	30	24	54	28	22	50	27	0	8	7	12	0	1	9	92	
	Howard street.....	26	17	43	53	28	81	24	16	40	30	14	44	23	0	7	4	13	0	5	5	88	
	Grand street.....	38	20	58	50	30	80	29	20	49	26	17	43	31	0	5	2	10	0	2	13	88	
	Powell street.....	16	17	33	34	30	64	15	16	31	14	15	29	17	0	3	3	10	1	0	1	94	
	Adams street.....	56	23	79	76	36	112	50	22	72	48	20	68	29	0	2	0	23	2	0	8	94	
	Fourth street.....	16	21	37	34	41	75	15	22	37	14	19	33	20	0	14	9	7	5	6	3	89	
	Totals,.....	206	150	356	345	256	601	194	139	333	175	123	301	160	0	60	32	83	8	27	64	90	
Primaries. Graded Upper. { No. 17..... 33..... 36..... 43..... 44.....	Branch street.....	28	15	43	50	34	84	24	16	40	22	14	36	4	28	5	2	27	4	15	0	90	
	Lawrence street.....	36	38	74	71	77	148	29	32	61	28	29	57	20	54	5	7	55	6	1	25	0	93
	Cabot street.....	43	14	57	77	25	112	39	13	52	35	9	44	19	35	17	6	41	7	35	1	85	
	Cross street.....	35	10	45	81	17	98	37	7	44	34	6	40	12	29	5	5	42	4	15	0	91	
	Lewis street.....	33	13	46	81	42	123	36	14	50	33	11	44	19	29	8	7	34	13	1	19	0	88
	Totals.....	175	90	265	360	195	565	165	82	247	152	69	221	74	175	40	27	199	34	3	109	1	89

<i>Primaries.</i> Graded. Middle.	No. 34.....	23	29	52	47	53	100	21	23	44	19	21	40	5	38	4	5	30	0	0	4	3	90
	Ames street.....	30	21	51	59	57	116	26	23	44	22	21	43	6	53	12	10	55	0	0	6	4	93
	Cabot street.....	25	13	74	35	109	26	10	36	24	10	34	26	0	43	0	14	25	0	0	5	3	94
	Cross street.....	30	3	33	80	20	100	28	5	33	25	4	29	14	46	0	8	33	5	1	0	2	88
	Lewis street.....	47	7	54	86	18	104	42	7	49	38	6	44	16	36	5	2	27	2	0	11	7	89
	Totals.....	155	73	228	346	183	529	140	68	208	123	62	190	67	173	64	39	174	13	1	26	19	91
	<i>Primaries.</i> Graded. Lower.	No. 50.....	18	26	44	47	69	116	17	25	42	16	23	39	65	0	7	11	38	2	0	7	14	93
Ames street.....		35	41	76	76	78	154	29	27	56	27	27	54	84	0	11	10	53	0	0	1	52	96
Race street.....		31	18	49	83	58	141	32	18	50	28	16	44	57	0	2	3	12	2	0	7	21	88
Cross street..		45	12	57	95	33	128	41	10	51	39	9	48	56	0	9	3	51	0	0	5	23	94
Lewis street.....		57	15	72	107	35	142	49	12	61	47	11	58	67	0	3	10	40	0	0	0	35	95
Totals.....		186	112	298	408	273	681	168	92	260	157	86	243	329	0	32	37	194	4	0	20	145	93
Summary.....		2995	2469	5464	5494	4579	10083	2768	2314	5082	2546	2077	4623	1806	1547	846	700	1624	439	351	2332	493	91

THE
AUDITOR'S
Thirty-Eighth Annual Report
OF THE
RECEIPTS AND EXPENDITURES
OF THE
CITY OF LOWELL,

Together with the Treasurer's Account for the Financial year
Ending December 31, 1873.



LOWELL:
CITIZEN AND NEWS PRESS,—KNAPP & MOREY, BOOK AND JOB PRINTERS,
44 Central Street.
1874.

CITY OF LOWELL.

IN COMMON COUNCIL, January 13, 1874.

Read and sent up to the Board of Aldermen.

GEORGE GARDNER, Clerk.

IN BOARD OF ALDERMEN, January 13, 1874.

Received and read.

SAMUEL A. McPHETRES, City Clerk.

AUDITOR'S REPORT
OF THE
RECEIPTS AND EXPENDITURES
FOR THE YEAR ENDING
DECEMBER 31, 1873.

AUDITOR'S REPORT.

CITY OF LOWELL,
AUDITOR'S OFFICE, JANUARY 13, 1874. }

To the City Council of the City of Lowell:

The Auditor of Accounts herewith has the honor of presenting to the City Council the Thirty-Eighth Annual Report of the Receipts and Expenditures of the City of Lowell, showing the financial transactions for the year which terminated on the 31st day of December, 1873, with the details under the separate heads.

Annexed are schedules of all the property of the City, a statement of City Debt, and the debts due the City.

RECEIPTS.

The whole amount of money received into the Treasury from all sources, from December 31st, 1872, to December 31st, 1873, as by the account of the Treasurer, was..... \$1,251,504 35

Of this amount there was received

For Taxes of 1870,.....	\$	4	00
Taxes of 1871,.....		6	00
Taxes of 1872,.....		3,017	51
Taxes of 1873,.....		604,625	55
			<hr/>
			\$607,653 06

Total amount received for taxes,.....\$607,653 06

Received on account of RE-
SERVED FUND:

From Huntington Hall, for rent,	\$2,041	00
From Jackson Hall, for rent,	8	10
		<hr/>

Amounts carried forward,.. \$2,051 00

\$607,653 06

<i>Amounts brought forward,..</i>	\$2,051 00	\$607,653 06
Received on account of RE- SERVED FUND:		
From Market House Building, for rent (of store and cellar,)	1,000 00	
From Commonwealth, for rent of Armories, for 1872.....	1,200 00	
From City Government Building, for rent of stores,.....	3,820 00	
From heating stores in City Gov- ernment Building,.....	75 00	
From Sydney Davis, Superinten- dent of City Scales, fees for weighing,.....	583 36	
From Sydney Davis, for fees as Measurer of Wood and Bark..	274 55	
From Samuel M. Patterson, for Weigher's and Measurer's fees received at City Scales,.....	121 60	
From Alanson Nichols, for fees re- ceived for weighing articles on private scales, after deducting commission,.....	93 52	
From City Clerk, for Marriage Certificates,.....	365 00	
From City Clerk, for recording Mortgages and Assignments of Wages,.....	455 18	
From City Clerk, for sundry Li- censes,.....	1,120 05	
From Walter H. Leighton, Super- intendent of Burials, for the use of hearses,.....	61 35	
From sundry persons, for costs on Taxes, and interest on same..	1,328 70	
From the following named persons, for costs of advertising their real estate for sale for non-pay- ment of taxes of 1872, paid be- fore sale, to wit:		
From Catherine Beatty,.....	3 75	
From Eliza Dupee,.....	3 75	
From Joseph V. Smith.....	3 75	
From heirs of Nathaniel Wright,	3 75	
From William L. Swett,.....	3 75	
<i>Amounts carried forward,..</i>	12,568 06	607,653 06

Amounts brought forward, \$12,568 06

\$607,653 06

Received on account of RE-
SERVED FUND :

From the following named persons for costs of preparing their real estate for sale for non-payment of taxes of 1872, the same having been paid by sundry purchasers, at Collector's sale, viz :

From J. Ball,.....	4 33
From J. Brown,.....	4 30
From F. W. Cross, Jr.,.....	4 30
From J. Rothwell,.....	4 37
From H. C. Adams,.....	4 28
From G. H. Chadwick,.....	4 30
From W. Griffin,.....	4 28
From I. P. Hadley,.....	4 28
From N. Lyford,.....	4 28
From C. H. Pierce,.....	4 30
From heirs of T. H. Simpson,....	4 39

From Levi Hancock, for amount paid by him over and above the taxes and costs on the estate of the heirs of Thomas H. Simpson, purchased by said Hancock, at Collector's sale of real estate of 1872,..... 22 83

From Francis Goward, for release of land on Blossom street, sold for non-payment of taxes, 9 36

From William Lugg, for costs of advertising his real estate for sale for non-payment of sidewalk assessment,..... 9 92

From Phineas Whiting, for costs of preparing his real estate for sale for non-payment of sidewalk assessment,..... 6 60

From John J. Kerwin, for hawkers' and peddlers' license,.. 25 00

From Aaron T. Flanders, for hawkers' and peddlers' license, 25 00

From Sanford J. Foote, for auctioneers' license,..... 25 00

From St. Jean Baptiste Society, for use of Ward Room No. 4.. 12 50

Amounts carried forward,.. \$12,751 68

\$607,653 06

Amounts brought forward,.. \$12,751 68

\$607,653 06

Received on account of RE-
SERVED FUND:

From S. & W. Langley, for old waste paper,.....	18 64
From H. R. Barker & Co., for coal dust,.....	11 88
From Calvin T. Chamberlin, for two hearses,.....	750 00
From James W. Brooks, for one hearse,.....	100 00
From J. B. Currier, for one hearse,	350 00
From Geo. J. Carney, for heating Lowell Institution for Savings Building.....	675 00
From George J. Carney, for heating J. Rogers & Co's store,.....	75 00
From George J. Carney, for extra labor, heating,.....	22 50
From Commonwealth, reimbursement of militia mileage,.....	181 20
From Charles E. Dow, (overdraft)	20 00
From Thomas Flynn, (overdraft)..	48 00
From B. Goddard & Son, for wood,	1 00
From Robert Ewan, for costs of preparing his real estate for sale for non-payment of sewer assessment,.....	2 60
From Commonwealth, reimbursement of militia bounty,.....	335 00
From the following named persons, by City of Lowell, for costs of preparing their estates for sale for non-payment of sewer assessments on South street, to wit:	
From Timothy McOwen,.....	6 97
From James W. Perkins,.....	8 05
From D. S. Hoyt,.....	8 05
From James W. Perkins,.....	7 29
From J. Christy,.....	8 61
From Charles J. Eastman, for costs of preparing the estate of Patrick Marr, South street, for sale for non-payment of sewer assessment,.....	7 21

Amounts carried forward,... \$15,388 68

\$607,653 06

Amounts brought forward,.. \$15,388 68 \$607,653 06

Received on account of RE-
SERVED FUND:

From George W. Norris, for costs of preparing the estate of Michael Buckley, South street, for sale for non-payment of sewer assessment,.....	7 29		
From Harry R. Rice, for costs of preparing the estate of Hugh Morrow, South street, for sale for non-payment of sewer assessment,.....	8 13		
From Harry R. Rice, for costs of preparing the estate of Stillman D. Holmes, South street, for sale for non-payment of sewer assessment,.....	7 25		
From Harry R. Rice, for costs of preparing the estate of Timothy McOwen, South street, for sale for non-payment of sewer assessment,.....	7 09		
	<hr/>	15,418 44	
		<hr/>	15,418 44

Received on acc't of SCHOOLS:

From Commonwealth, being the City's proportion of the School Fund, to Jan. 1, 1873,.....	1,292 84		
From sundry persons for tuition, books, &c.,.....	742 75		
	<hr/>	2,035 59	
		<hr/>	2,035 59

Received on acc't of SCHOOL-
HOUSES:

From Runels & Davis, for twelve granite posts,.....	32 82
From W. H. Parker, for boards, ..	50 41
From L. G. Howe, for blinds, brick, old material, &c.,.....	25 97
From W. H. Wiggin, for whitening High Street School House,...	38 00
From D. M. Prescott, for dressing blackboards,.....	55 00

Amounts carried forward,.. \$202 20 \$625,107 09

<i>Amounts brought forward,..</i>	\$202 20		\$625,107 09
Received on acc't of SCHOOL- HOUSES :			
From C. W. Johnson, for Prima- ry School House and land on Tilden street,	3,450 00		
From J. W. Bennett, for sash and frames,	51 50		
From appropriation for Roads and Bridges, for concrete,	15 13		
	<u> </u>	3,718 83	
		<u> </u>	3,718 83
Received on account of ROADS AND BRIDGES :			
From sundry persons, on account of sidewalk assessments, street materials, coal, stone, labor, &c.,	44,869 72		
	<u> </u>	44,869 72	
		<u> </u>	44,869 72
Received on account of PAU- PERS :			
From City of Boston, for aid ren- dered Mary Murphy,	18 00		
From Amos S. Brown, for sup- port of Angie A. Brown at State Lunatic Hospital, (Wor- cester)	273 30		
From Town of Milford, for aid rendered Margaret Quinn,	60 00		
From Town of Windsor, for aid rendered Frank Harvey,	5 00		
From Town of Danvers, for aid rendered Annie M. Welch and children,	364 00		
From Commonwealth, on account of State Paupers,	833 79		
From Town of Manchester, for aid rendered Ann Quinn,	47 00		
From City of Charlestown, for support of boys at the Alms- house,	583 35		
From City of Chelsea, for support of boys at the Almshouse,	471 98		
	<u> </u>		
<i>Amounts carried forward,..</i>	\$2,656 42		\$673,695 64

<i>Amounts brought forward,..</i>	\$2,656 42	\$673,695 64
Received on account of PAU- PERS:		
From John Stott, guardian, for support of John A. Bennett, at State Lunatic Hospital, (Wor- cester,).....	79 60	
From Town of Watertown, for aid rendered Catherine Kerwin,...	33 50	
From Town of Weymouth, for aid rendered Catherine Slattery...	45 00	
From City of Lawrence, for aid rendered Charles Knapp,.....	144 00	
From Town of Natick, for aid ren- dered Mary Cooley.....	85 00	
From Town of Concord, for aid rendered Elizabeth Howe,.....	38 00	
From Estate of Josiah Sawtelle, for support of Edward N. Saw- telle at State Lunatic Hospital (Northampton,).....	250 24	
From Town of Winchester, for support of boys at the Alms- house,.....	125 13	
From City of Boston, for support of B. Dougherty at Quarantine Station,.....	35 71	
From City of Lawrence, for aid rendered Thomas Dyson,.....	15 72	
From Lorenzo Phelps, for sales from farm,.....	2,478 58	
From Lorenzo Phelps, for support of boys at the Almshouse,....	162 38	
From C. R. Blaisdell, for support of E. H. Goodrich,.....	36 57	
From James Kerwin, for support of Bridget Kerwin, at State Lu- natic Hospital (Worcester,)...	48 00	
From Hiram Littlefield, for aid rendered P. Moulton;.....	11 43	
From Town of Woburn, for sup- port of boys at Almshouse....	75 14	
From City of Somerville, for aid rendered James Swift,.....	19 00	
From Town of Concord, for aid render B. F. Nealley and family,	78 50	
<i>Amounts carried forward,..</i>	\$6,417 92	\$673,695 64

Amounts brought forward,.. \$6,417 92 \$673,695 64

Received on account of PAU-
PERS:

From Town of Ashland, for aid rendered Mary Driscoll,.....	9 00	
From Appropriation for Roads and Bridges, for Hay,.....	24 50	
From Appropriation for Fire Department, for Hay,.....	67 37	
From Town of Waltham, for aid rendered Margaret Joyce,.....	30 00	
From Town of Tewksbury, for aid rendered Anthony McDonald,.	6 00	
From Lorenzo Phelps, for support of paupers at the Almshouse, ..	128 06	
From Appropriation for Roads and Bridges, for carrots,	38 87	
	<hr/>	6,721 72
		<hr/> 6,721 72

Received on account of PO-
LICE:

From Samuel P. Hadley, jr., Clerk of the Police Court, for services of Police Officers, witnesses' fees, &c.,.....	11,459 88
From Whitmore & Clark, for services of Police Officers,.....	1 50
From Jubilee Singers, for services of Police Officers,.....	1 50
From Francis Jewett, for services of Police Officers,.....	36 25
From W. S. Pike, for services of Police Officers,.....	1 25
From George E. Locke, for services of Police Officers,.....	2 50
From Irish Benevolent Society, for services of Police Officers,.....	2 50
From County of Middlesex, for rent of Police Court Rooms,...	500 00
From P. T. Barnum, for services of Police Officers,.....	5 00
From B. G. Mooney, for fees from courts,.....	251 51

Amounts carried forward,.. \$12,261 89

\$680,417 36

Amounts brought forward,... \$12,261 89 \$680,417 36

Received on account of POLICE:

From Joseph Hayward, for services of Police Officers,.....	1 25		
From Marin & Jewett, for broad-cloth.....	12 00		
From C. P. Bowles, for services of Police Officers,.....	20 00		
From Signor Girard, for services of Police Officers,.....	1 25		
From B. G. Mooney, for conveyance of persons to Lunatic Hospitals,.....	88 61		
	<u> </u>	12,385 00	
		<u> </u>	12,385 00

Received on account of FIRE DEPARTMENT:

From George Hobson, for labor, old hydrants, use of Steamer, old iron, &c.,.....	253 90		
From Hallowell & Wight, for old zinc and brass,.....	11 04		
From Chas. Callahan, for old iron,	154 82		
From E. A. Alger, for use of Steamer,.....	10 00		
From J. W. Bennett, for rent of land,.....	50 00		
From Cole & Nichols, for old iron,	51 71		
From George H. Norman, for labor,.....	82 80		
From Appropriation for Water Works, for labor and use of Steamer,.....	96 25		
From A. L. Waite, for hose and couplings,.....	46 50		
From Appropriation for Health Account, for labor,.....	15 00		
From Appropriation for Paupers, for labor,.....	42 00		
From Clough & Sweatt, for one cart body,.....	10 00		
	<u> </u>	824 02	
		<u> </u>	824 02

Amount carried forward,..... \$693,626 38

Amount brought forward,..... \$693,626 38

Received on acc't of SEWERS
AND DRAINS:

From sundry persons, on account of sewer assessments, &c.,....	3,980 89		
	<hr/>	3,980 89	
		<hr/>	3,980 89

Received on acc't of COMMONS:

From Chas. A. F. Swan, for grass on the South Common,.....	77 00		
From City Clerk, for use of South Common, (for circuses,).....	300 00		
From City Clerk, for booths, (July 4th,).....	73 00		
From E. B. Patch, for grass on the North Common and Park Gar- den,.....	65 38		
From Appropriation for Water Works, for fence,.....	913 39		
	<hr/>	1,428 77	
		<hr/>	1,428 77

Received on account of LIGHT-
ING STREETS AND PUB-
LIC BUILDINGS:

From George Hobson, for old post and lanterns,.....	26 00		
From Cole & Nichols, for old iron,	12 50		
From Church of Immaculate Con- ception, for lamp post,.....	24 00		
From Town of Dracut, for lighting Pawtucket Bridge and Square, six months, to April 1, 1873, and for globes and alcohol,....	20 00		
From Appleton Company, for lamp and lantern,.....	33 16		
	<hr/>	115 66	
		<hr/>	115 66

Received on acc't of REPAIRS
OF PUBLIC BUILDINGS:

From Charles E. Paige, for old boiler iron,.....	450 61		
	<hr/>		
<i>Amounts carried forward</i> ,..	\$450 61		\$699,151 70

<i>Amounts brought forward,..</i>	\$450 61		\$699,151 70
Received on acc't of REPAIRS OF PUBLIC BUILDINGS:			
From L. G. Howe, for paint, and old door,.....	2 44		
From H. H. Wilder & Co., for (overdraft,).....	2 50		
From Appropriation for Water Works, for (overdraft,).....	25 53		
		481 08	
			481 08
Received on account of CITY LIBRARY:			
From County of Middlesex, on account of Dog licenses, 1872,	2,142 86		
From Marshall H. Clough, Libra- rian, for subscriptions,.....	762 00		
From Marshall H. Clough, Libra- rian, for catalogues,.....	27 50		
From Marshall H. Clough, Libra- rian, for fines,.....	29 55		
From Marshall H. Clough, Libra- rian, for supplements,.....	31 20		
From Marshall H. Clough, Libra- rian, for lost books,.....	23 65		
		3,016 76	
			3,016 76
Received on account of CITY DEBT:			
From Lowell Institution for Sav- ings, on note for ten years, dated October 17, 1873, with interest at seven per cent. per annum, payable semi-annually,	30,000 00		
		30,000 00	
			30,000 00
Received on account of INTER- EST:			
From Appleton National Bank, for interest on daily balances from August 9, 1872, to January 1, 1873,.....	2,316 70		
<i>Amounts carried forward,..</i>	\$2,316 70		\$732,649 54

<i>Amounts brought forward,..</i>	\$2,316 70		\$732,649 54
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Received on account of INTER-
EST :

From Appleton National Bank, for interest on daily balances to July 1, 1873,.....	1,384 22		
From Commonwealth, for interest on State Tax paid before due,	434 02		
	<u> </u>	4,134 94	
		<u> </u>	4,134 94

Received on account of TEM-
PORARY LOANS:

From Appleton National Bank,..	191,088 00		
	<u> </u>	191,088 00	
		<u> </u>	191,088 00

Received on account of COR-
PORATION TAX:

From Commonwealth, for taxes on Corporation Stocks collected by the State, for 1872,.....	728 24		
From Commonwealth, for taxes on Corporation Stocks, collected by the State, for 1873, (in part,).....	19,907 30		
From Commonwealth, for National Bank Tax,.....	3,426 84		
	<u> </u>	24,062 38	
		<u> </u>	24,062 38

Received on account of DIS-
ABLED SOLDIERS AND
SAILORS, AND THEIR
FAMILIES, AND FOR
THE FAMILIES OF THE
SLAIN:

From Commonwealth, re-imburse- ment State Aid, (in part,) for 1872,.....	18,000 00		
From Patrick Holland, (overdraft,)	13 33		
From Clara Nealley, (overdraft,)	104 00		
	<u> </u>	18,117 33	
		<u> </u>	18,117 33

<i>Amount carried forward,.....</i>			\$970,052 19
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Amount brought forward,.....\$970,052 19

Received on account of WA-
TER WORKS:

From Appleton National Bank, interest on daily balances, from August 12, 1872, to January 1, 1873,.....	395 64
From Henry F. Durant, amount allowed him on September draft, 1872, for land corner of Bow and Pearl streets, under an agreement between the City of Lowell and Isaac D. Farns- worth of Boston, dated Decem- ber 10, 1872.....	2,622 00
From R. L. Day & Cobb, for 5 \$1000 City of Lowell Water Loan Bonds, numbered from "1211" to "1215" inclusive,	5,000 00
From R. L. Day & Cobb, for ac- crued interest on the above Bonds, from November 1, 1872, to January 27, 1873,.....	71 67
From William Shepard, for 25 \$1000 City of Lowell Water Loan Bonds, numbered from "1216" to "1240" inclusive.	25,000 00
From William Shepard, for accru- ed interest on the above Bonds, from November 1, 1872, to Feb- ruary 13, 1873,.....	429 16
From George H. Norman, for iron pipe, labor, lead, and freight,.	1,259 01
From Brewster, Sweet & Co., for 25 \$1000 City of Lowell Water Loan Bonds, numbered from "1241" to "1265" inclusive,	25,000 00
From Brewster, Sweet & Co., for accrued interest on the above Bonds, from November 1, 1872, to March 13, 1873,.....	554 16
From Henry G. Morris, for hair felting,.....	34 65
From Levi Sprague, for coal,....	18 74
For use of water, service pipe, la- bor, and material,.....	55,848 47

Amounts carried forward,.. \$116,233 50

\$970,052 19

<i>Amounts brought forward,..</i>	\$116,233 50	\$970,052 19
Received on account of WATER WORKS:		
From Proprietors of Locks and Canals on Merrimack River, for iron pipe,.....	40 10	
From William Shepard, for 1 \$1000 City of Lowell Water Loan Bond, numbered "1301"	1,000 00	
From William Shepard, for accrued interest on the above Bond, from May 1, 1873,.....	83	
From Appropriation for Sewers and Drains, for cement,.....	7 88	
From Brewster, Sweet & Co., for 10 \$1000 City of Lowell Water Loan Bonds, numbered from "1266" to "1275" inclusive,	10,000 00	
From Brewster, Sweet & Co., for accrued interest on the above Bonds, from May 1, to May 27, 1873,.....	45 00	
From Lowell Five Cents Savings Bank, for 16 \$1000 City of Lowell Water Loan Bonds, numbered from "1302" to "1317", inclusive,.....	16,000 00	
From Lowell Five Cents Savings Bank, for accrued interest on the above Bonds, from May 1, to May 30, 1873,.....	80 00	
From City of Boston, for 24 inch water pipe and special castings, less freight,.....	2,342 99	
From C. B. Coburn & Co., for oil,	79 12	
From J. F. Kimball, for 1 \$1000 City of Lowell Water Loan Bond, numbered "1318"	1,000 00	
From J. F. Kimball, for accrued interest on the above Bond,...	7 00	
From William Shepard, for 2 \$1000 City of Lowell Water Loan Bonds, numbered "1319" and "1320".....	2,000 00	
From William Shepard, for accrued interest on the above Bonds,	14 33	
<i>Amounts carried forward,..</i>	\$148,850 75	\$970,052 19

Amounts brought forward, ..\$148,850 75

\$970,052 19

Received on account of WA-
TER WORKS:

From Lowell Institution for Sav- ings, for the term of twenty years on the City's note, dated June 14, 1873, bearing interest at the rate of six and six-tenths per cent. per annum, payable semi-annually,.....	100,000 00	
From E. B. Patch, for sale of barn and shed adjacent to the Engine House, less commissions,.....	104 50	
From Nelson Holmes, for rent,...	185 00	
From William Shepard, for 1 \$1000 City of Lowell Water Loan Bond, numbered "1321".	1,000 00	
From William Shepard, for accru- ed interest on the above Bond,.	8 83	
From Brewster, Sweet & Co., for 25 \$1000 City of Lowell Wa- ter Loan Bonds, numbered "1276 " to "1300" inclusive,	25,000 00	
From Brewster, Sweet & Co., for ac- crued int't on the above Bonds,	287 50	
From Lowell Gas Light Co. for one 3 way-branch,.....	14 08	
From Frye & Kittredge, for cen- trifugal pump and pipe,.....	200 00	
From City of Lowell Water Loan Sinking Fund, for 3 \$1000 City of Lowell Water Loan Bonds, numbered "1322," "1323 " and 1324".....	3,000 00	
From L. Kittredge & Sons, for shovels,.....	43 50	
From L. Sprague, for broken pipe,	245 06	
From Lucian H. Reed, for 1 \$1000 City of Lowell Water Loan Bond, numbered "1325"....	1,000 00	
From Lucian H. Reed, for accrued interest on the above Bond..	2 50	
From Lowell Bleachery, for la- bor and material,.....	1,391 87	
	<u>281,333 59</u>	
		<u>281,333 59</u>
<i>Amount carried forward,</i>		\$1,251,385 78

Amount brought forward,.....\$1,251,385 78

Received on acc't of HEALTH
ACCOUNT:

From C. P. Bowles, for cleaning streets,.....	30 00		
From Commonwealth, on account of contagious diseases,.....	88 57		
		<hr/>	118 57
			<hr/>
			118 57
			<hr/>
			\$1,251,504 35
			<hr/>

EXPENDITURES.

The amount expended and ordered to be paid from the Treasury the past year, from December 31, 1872, to December 31, 1873, was.....

\$1,286,334 29

These expenditures are chargeable to the following Appropriations or Accounts, viz.:.....

To Schools,.....	\$133,440 68		
School houses,.....	42,661 51		
*Roads and Bridges,.....	144,257 05		
Reserved Fund,.....	16,098 21		
Paupers,.....	23,069 60		
Police,.....	45,072 50		
Fire Department,.....	37,309 91		
Sewers and Drains,.....	65,575 66		
Commons,.....	6,914 75		
Printing and Advertising,....	3,012 30		
Lighting Streets and Public Buildings,.....	18,350 92		
Repairs of Public Buildings,....	5,325 55		
City Library,.....	5,246 10		
Salaries,.....	18,247 91		
City Debt,.....	15,124 63		
Interest on City Debt,.....	31,702 39		
		<hr/>	\$611,409 67
			<hr/>
			611,409 67
			<hr/>
<i>Amount carried forward</i> ,.....			\$611,409 67

*For actual Expenditures for Roads and Bridges, see Expenditures for Roads and Bridges in detail.

<i>Amount brought forward,</i>		\$611,409 67
To Temporary Loan,.....	191,088 00	
	<u>191,088 00</u>	191,088 00
To Disabled Soldiers, Sailors, and their families, &c.....	16,628 62	
	<u>16,628 62</u>	16,628 62
To Water Works,.....	349,717 87	
	<u>349,717 87</u>	349,717 87
To Health Account,.....	2,160 81	
	<u>2,160 81</u>	2,160 81
To the above add the amount paid State Tax of 1873,.....	43,402 50	
	<u>43,402 50</u>	43,402 50
To the above add the amount paid County Tax for 1873,.....	24,726 24	
	<u>24,726 24</u>	24,726 24
To the above add the amount paid Commonwealth National Bank Tax for 1873,.....	22,200 58	
	<u>22,200 58</u>	22,200 58
To the above add the amount Ap- propriated for Sinking Fund, which is invested for interest for the reduction of the Lowell Water Loan Debt.....	25,000 00	
	<u>25,000 00</u>	25,000 00
Making the whole amount of ex- penditures for the year 1873,..		<u>\$1,286,334 29</u>
The whole amount of receipts was.....	\$1,251,504 35	
The whole amount of expenditures was.....	<u>1,286,334 29</u>	
Excess of expenditures over receipts,		<u>\$34,829 94</u>

The balance in the Treasury, January 1st, 1873, was,.....	\$159,301 71	
The whole amount received into Treasury in 1873, was,.....	1,251,504 35	
Making a total of.....	<u>\$1,410,806 06</u>	
The amount actually paid from the Treasury, for all purposes, for the year ending December 31, 1873, was,.....	1,275,833 21	134,972 85
The balance in the Treasury, as above is,.....	134,972 85	
There remains the amount of the unpaid Draft of December, 1873, amounting to,.....	<u>50,443 37</u>	
Making the actual balance in the Treasury,.....		<u>\$84,529 48</u>
The amount of the City Debt, December 31st, 1872, was,.....		\$1,707,624 63
There has been paid this year Four Thousand Six Hundred Twenty-four Dollars and sixty-three cents, on note to Trustees of Thomas Nesmith,.....	4,624 63	
There has also been paid this year Ten Thousand Five Hundred Dollars on the City Debt, which became due November 1st, 1873, to the City Institution for Savings,.....	<u>10,500 00</u>	15,124 63
		<u>1,692,500 00</u>
Borrowed of Lowell Institution for Savings, for the term of twenty years, on the City's note, dated June 14, 1873, One Hundred Thousand Dollars, bearing interest at the rate of six and six-tenths per cent. per annum, payable semi-annually, (for construction of Water Works),...	<u>100,000 00</u>	
<i>Amounts brought forward,.....</i>	<u>\$100,000 00</u>	<u>\$1,692,500 00</u>

Amounts brought forward,..... \$100,000 00 \$1,692,500 00

Borrowed of Lowell Institution for Savings, Thirty Thousand Dollars, on account of the extension of Appleton Street, on the City's note, payable in ten years with interest at the rate of seven per cent. per annum, payable semi-annually.....

30,000 00

There has been sold during the year \$115,000 00 of the City of Lowell Water Loan Bonds, numbered from "1211" to "1325" inclusive, payable November 1, 1890, bearing interest at the rate of six per cent. per annum, payable semi-annually,.....

115,000 00

245,000 00

The total amount of the City Debt, December 31st, 1873, is.....

\$1,937,500 00

Of the above amount, \$512,000 belongs to the ordinary City Debt,.....

\$512,500 00

The total amount of the debt of the City to December 31st, 1873, for the construction of the Water Works, is,.....

1,425,000 00

Making a total of City Debt, December 31st, 1873,.....

\$1,937,500 00

All of which is respectfully submitted.

GEORGE GARDNER,

Auditor of Accounts.

APPROPRIATIONS AND EXPENDITURES.

THE AMOUNT OF THE SEVERAL APPROPRIATIONS MADE BY THE CITY COUNCIL DURING THE YEAR 1873—THE TRANSFERS FROM ONE APPROPRIATION TO ANOTHER—THE UNEXPENDED BALANCES OF THE PREVIOUS YEAR—THE AMOUNT RECEIVED INTO THE TREASURY FROM OTHER SOURCES THAN TAXES, AND THE EXPENDITURES IN DETAIL UNDER EACH APPROPRIATION, AND THE UNDRAWN BALANCES; ALSO THE AMOUNT OF CITY DEBT—DEBTS DUE THE CITY—SCHEDULES OF REAL AND PERSONAL PROPERTY, &c.

SCHOOLS.

Balance undrawn January 1, 1873.....	\$2,485 05	
Appropriated and assessed in 1873.....	115,000 00	
	<hr/>	\$117,485 05

RECEIVED INTO THE TREASURY.

Received of Commonwealth, being the City's proportion of the School Fund to Janu- ary 1, 1873.....	1,292 84	<hr/>	1,292 84
From Harriet V. Ames, for tuition.....	60 00		
Frank M. Clark, “	60 00		
Fred. S. Hull, “	30 00		
Jane E. Clark, “	40 00		
George S. Butters, Jr., “	60 00		
Othniel R. Park, “	30 00		
Kate S. Hull, “	30 00		
Edwin E. Chase, “	60 00		
	<hr/>		
<i>Amounts carried forward,.....</i>	<i>\$370 00</i>		<i>\$118,777 89</i>

<i>Amounts brought forward,.....</i>	\$370 00	\$118,777 89
From Roscoe L. Chase, for tuition,	30 00	
John A. Shepard, “	40 00	
Carrie M. Blackington, “	10 00	
Thomas J. Marsh, Jr., “	20 00	
Stella E. Beaman, “	26 00	
Nettie P. Butters, “	10 00	
Grant M. Palmer, “	10 00	
Harry R. Marsh, “	10 00	
John J. Colton, “	10 00	
Charles Morrill, for books,	69 83	
F. P. Coggeshall, “	68 20	
Annie S. Harlow, (overdraft)	1 00	
Boston & Lowell and Nashua & Lowell Railroad Co., (overdraft).....	92	
Charles Morrill, on account of Evening Schools.....	43 68	
L. G. Howe, for old junk, wood, and coal,.....	15 48	
H. R. Barker & Co., for coal dust....	7 64	
		742 75
Transferred from Appropriation for Interest on Water Works.....	25,000 00	
		25,000 00
		<u>\$144,520 64</u>

EXPENDITURES.

Paid for INSTRUCTION :

HIGH SCHOOL.

To Charles C. Chase, Principal.....	\$2,650 00	
Levi S. Burbank.....	1,500 00	
Edwin H. Lord.....	680 00	
James S. Russell.....	1,955 00	
Mary A. Webster.....	862 50	
Marietta Melvin.....	862 50	
Elilabeth McDaniels.....	862 50	
Harriet C. Hovey.....	862 50	
Charlotte E. Draper.....	862 50	
		\$11,097 50
<i>Amount carried forward,.....</i>		\$11,097 50

Amount brought forward,..... \$11,097 50

Paid for INSTRUCTION:

BARTLETT SCHOOL.

To Samuel Bement, Principal.....	1,955 00	
Marianne B. Kent.....	690 00	
Mary E. Pike.....	690 00	
Mary C. Gardner.....	466 86	
Sophia P. Wetherbee.....	690 00	
Caroline E. Holt.....	690 00	
M. Ida Howe.....	460 00	
Frances Horne.....	102 50	
Annie S. Harlow.....	90 75	
Cemantha R. Nichols.....	509 36	
	<hr/>	6,344 47

COLBURN SCHOOL.

To Perley Balch, Principal.....	1,955 00	
Elizabeth W. Frost.....	690 00	
Susie M. Andrews.....	690 00	
Sarah J. Crosby.....	680 00	
Emma C. Sawyer.....	688 50	
Arvilla L. Reader.....	690 00	
Elizabeth A. Balch.....	11 50	
Mary P. White.....	137 50	
	<hr/>	5,542 50

EDSON SCHOOL.

To Calvin W. Burbank, Principal.....	1,955 00	
Maria C. R. Swan.....	690 00	
Anna A. Sargent.....	690 00	
Mary F. Carleton.....	690 00	
Olive W. Beane.....	690 00	
Mary A. Balch.....	690 00	
Fanny A. Scripture.....	466 29	
Martha A. Paul.....	64 00	
Helen A. Bowers.....	217 00	
Helen M. Hunt.....	150 00	
	<hr/>	6,302 29

FRANKLIN SCHOOL.

To Stephen G. Bailey, Principal.....	1,955 00	
Sarah E. French.....	680 14	
Abbie F. Woodward.....	686 50	
	<hr/>	
<i>Amounts carried forward</i> ,.....	\$3,321 64	\$29,286 76

Amounts brought forward,..... \$3,321 64 \$29,286 76

Paid for INSTRUCTION :

To Emma L. Crosby.....	690 00	
Luella A. Wardwell.....	615 00	
Lucy J. Freeman.....	3 50	
Sarah E. Stevenson.....	4 00	
	<hr/>	4,634 14

GREEN SCHOOL.

To George F. Lawton, Principal.....	1,955 00	
Ida A. Hill.....	615 00	
Ruth B. Bailey.....	537 50	
Nettie E. Carleton.....	690 00	
Ida Sheldon.....	537 50	
Ellen S. Burrill.....	690 00	
Emma L. Pevey.....	690 00	
Anna E. Richardson.....	690 00	
Emily A. Howe.....	185 26	
Frances E. Hardman.....	109 50	
Mary E. Stone.....	72 00	
	<hr/>	6,771 76

MANN SCHOOL.

To Samuel A. Chase, Principal.....	1,829 20	
Nellie M. Gallagher, Principal.....	715 35	
Laura F. Howe.....	690 00	
Celestia P. Chase.....	690 00	
Julia M. Healey.....	615 00	
Frances N. Webster.....	54 00	
	<hr/>	4,593 55

MOODY SCHOOL.

To Joseph Peabody, Principal.....	1,955 00	
S. Elizabeth Dean.....	577 76	
Diana M. Huntoon.....	450 00	
Helen A. Haggett.....	690 00	
Laura J. Pindar.....	690 00	
Sarah E. Bailey.....	690 00	
Mary E. Way.....	640 94	
Mary E. Hardman.....	597 50	
Frances M. Webster.....	11 50	
Clementine H. Bowers.....	20 00	
Frances E. Hardman.....	147 83	
	<hr/>	6,470 53

Amount carried forward,..... \$51,756 74

Amount brought forward,..... \$51,756 74

Paid for INSTRUCTION :

VARNUM SCHOOL.

To Daniel P. Galloupe, Principal.....	1,955 00	
Harriet Bradley.....	690 00	
Sarah F. Dillingham.....	615 00	
Sarah A. Bradley.....	690 00	
Clara A. Hanaford.....	690 00	
Georgiana F. Vinton.....	480 00	
	<hr/>	5,120 00

SHERMAN SCHOOL.

To Cornelia Davis, Principal.....	730 00	
	<hr/>	730 00

TEACHER OF PENMANSHIP.

To Bertram Harrison.....	1,725 00	
	<hr/>	1,725 00

TEACHER OF VOCAL MUSIC.

To George F. Willey.....	1,725 00	
	<hr/>	1,725 00

PRIMARY SCHOOLS.

No. 2.—To Lucy J. Garrett.....	300 00	
Annie S. Harlow.....	152 89	
	<hr/>	452 89
No. 3.—To Abbie G. Watson.....	648 48	
Annie C. Howe.....	12 00	
Mary C. Frye.....	12 00	
	<hr/>	672 48
No. 4.—To Lucy F. Carleton.....	690 00	
	<hr/>	690 00
No. 5.—To Elizabeth A. Stearns.....	690 00	
	<hr/>	690 00
No. 6.—To Anna F. Peabody.....	460 00	
	<hr/>	460 00
No. 7.—To Mary J. Rice.....	690 00	
	<hr/>	690 00
No. 8.—To Martha A. Franklin.....	690 00	
	<hr/>	690 00

Amount carried forward,..... \$65,402 11

Amount brought forward,..... \$65,402 11

Paid for INSTRUCTION :

No. 9.—To Martha S. Williams.....	690 00	
	<hr/>	690 00
No. 10.—To Martha A. Neal.....	690 00	
	<hr/>	690 00
No. 11.—To Bella V. McNulty.....	690 00	
	<hr/>	690 00
No. 12.—To Eliza Merriam.....	690 00	
	<hr/>	690 00
No. 13.—To Cornelia M. Davis.....	537 50	
	<hr/>	537 50
No. 14.—To S. Augusta Haggett.....	615 00	
	<hr/>	615 00
No. 15.—To Abbie R. Worthley.....	615 00	
	<hr/>	615 00
No. 16.—To Marietta Hill.....	615 00	
	<hr/>	615 00
No. 17.—To Sarah C. Fiske.....	690 00	
	<hr/>	690 00
No. 18.—To Eliza Cowley.....	690 00	
	<hr/>	690 00
No. 19.—To Lizzie N. Smith.....	533 84	
Helen A. Bowers.....	2 00	
	<hr/>	535 84
No. 20.—To Susie J. Perkins.....	547 50	
	<hr/>	547 50
No. 21.—To Nellie F. Baker.....	480 00	
	<hr/>	480 00
No. 22.—To Ella E. Gardner.....	537 50	
	<hr/>	537 50
No. 23.—To Ella F. Perkins.....	450 00	
Alice M. Healey.....	101 25	
	<hr/>	551 25
No. 24.—To Ellen A. Bridge.....	690 00	
	<hr/>	690 00
No. 25.—To Aurelia L. Howe.....	690 00	
	<hr/>	690 00
No. 26.—To Charlotte E. Brown.....	615 00	
	<hr/>	615 00
No. 27.—To Mary E. Drew.....	690 00	
	<hr/>	690 00
No. 28.—To Emily M. Warren.....	690 00	
	<hr/>	690 00

Amount carried forward,..... \$77,951 70

Amount brought forward,..... \$77,951 70

Paid for INSTRUCTION :

No. 29.—To Jennie F. Woodward.....	531 35	
Sarah E. Stevenson.....	3 00	
	<hr/>	534 35
No. 30.—To Alice L. Frye.....	460 00	
	<hr/>	460 00
No. 31.—To Ella J. Hale.....	384 55	
Elizabeth A. Balch.....	83 25	
	<hr/>	467 80
No. 32.—To Ellen F. Coughlan.....	690 00	
	<hr/>	690 00
No. 33.—To Amanda M. Hadley.....	611 00	
Laura E. Lee.....	63 00	
Sarah J. Gilman.....	4 00	
	<hr/>	678 00
No. 34.—To Lizzie S. Lowe.....	690 00	
	<hr/>	690 00
No. 35.—To Clara A. Emerson.....	690 00	
	<hr/>	690 00
No. 36.—To Mary A. Beard.....	690 00	
	<hr/>	690 00
No. 37.—To Lucretia A. Day.....	632 46	
Laura E. Lee.....	11 00	
Frances M. Webster.....	9 00	
Sarah J. Gilman.....	6 00	
	<hr/>	658 46
No. 38.—To Mary O. Kidder.....	690 00	
	<hr/>	690 00
No. 39.—To Emma J. Alford.....	125 00	
Abbie L. Sargent	217 00	
Helen A. Bowers.....	66 25	
	<hr/>	408 25
No. 40.—To Sarah E. Scales.....	690 00	
	<hr/>	690 00
No. 41.—To Lilla J. Greenhalge.....	531 50	
Ida B. Cheney.....	6 00	
	<hr/>	537 50
No. 42.—To Lizzie M. Hadley.....	690 00	
	<hr/>	690 00
No. 43.—To Nellie M. Brown.....	690 00	
	<hr/>	690 00
No. 44.—To Mary L. Hill.....	690 00	
	<hr/>	690 00
No. 45.—To Ellen M. White.....	690 00	
	<hr/>	690 00

Amount carried forward,..... \$88,596 06

Amount brought forward,..... \$88,596 06

Paid for INSTRUCTION :

No. 46.—To Ella A. Bailey.....	690 00	
	<hr/>	690 00
No. 47.—To Miranda W. Bradley.....	678 00	
Frances M. Webster.....	12 00	
	<hr/>	690 00
No. 48.—To Marion A. Scott.....	527 71	
Annie C. Howe.....	43 00	
	<hr/>	570 71
No. 49.—To Marcella M. Patten.....	690 00	
	<hr/>	690 00
No. 50.—To Julia Leighton.....	401 38	
	<hr/>	401 38
No. 51.—To Mary J. Alger.....	690 00	
	<hr/>	690 00
No. 52.—To Maria Mansur.....	610 08	
Sarah E. Stevenson.....	2 00	
	<hr/>	612 08
No. 53.—To Sarah L. Gates.....	690 00	
	<hr/>	690 00
No. 54.—To Abby D. Gates.....	690 00	
	<hr/>	690 00
No. 55.—To Ella S. Stanwood.....	549 37	
Annie C. Howe.....	7 00	
	<hr/>	556 37
		<hr/>
		94,876 60

Paid SUPERINTENDENT OF PUBLIC SCHOOLS and SECRETARY OF THE BOARD OF SCHOOL COMMITTEE :

To Charles Morrill, Superintendent.....	2,300 00	
Charles Morrill, Secretary.....	200 00	
	<hr/>	2,500 00

Paid for BOOKS and STATIONERY, and for BOOKS, etc., for Children of Indigent Parents :

To F. P. Coggeshall & Son.....	2,537 29	
Brewer & Tileston.....	45 00	
Nichols & Hall.....	8 50	
C. C. Chase.....	37 86	
Joshua Merrill & Son.....	136 66	
	<hr/>	
<i>Amounts carried forward</i> ,.....	\$2,765 31	\$97,376 60

<i>Amounts brought forward</i> ,.....	\$2,765 31	\$97,376 60
Paid for BOOKS and STATIONERY, and for BOOKS, etc., for Children of Indigent Parents :		
To H. C. Church & Son.....	17 21	
G. T. Williams.....	26 00	
Ginn Brothers.....	315 00	
Parmenter & Walker, crayons.....	85 00	
J. L. Hammett.....	15 00	
F. W. C. Gilman & Co.....	4 32	
Abel Whitney (Ink).....	14 00	
Bacheller, Dumas & Co.....	3 84	
G. P. Whittier, Annual Cyclopædia for 1872.....	5 50	
G. E. Stanley, for trucking books.....	1 00	
Boston & Lowell and Nashua & Lowell Railroad Co., for freight on books, &c.....	3 63	
	<hr/>	3,255 81

Paid for PRINTING and ADVERTIS-
ING, etc. :

To Stone & Huse, for printing 3,000 co- pies School Committee's Report of 1872.....	355 38	
Bacheller, Dumas & Co., for binding 3,000 copies of School Committee's Report of 1872.....	40 00	
W. S. Simons, for distributing 2,500 copies School Committee's Report of 1872.....	12 50	
Stone & Huse, for printing and advertis- ing.....	288 10	
Knapp & Morey, for printing and ad- vertising.....	139 75	
Marden & Rowell, for printing and ad- vertising.....	100 75	
Edwin A. Hills, for printing and adver- tising.....	5 25	
Bacheller, Dumas & Co., for printing and binding.....	53 89	
	<hr/>	995 62
<i>Amount carried forward</i> ,.....	\$101,628 03	

Amount brought forward,..... \$101,628 03

Paid for EVENING SCHOOLS, for IN-
STRUCTION :

To Mrs. J. B. Bradt.....	112 50
H. Minnie Robbins.....	111 25
Hannah G. Crosby.....	101 00
Cornelia Davis.....	57 50
Kate A. Hill.....	95 00
Abbie L. Sargent.....	62 00
Emma J. Fuller.....	90 00
Ida B. Cheney.....	62 00
Annie S. Harlow.....	60 00
Mattie Worcester.....	88 00
Annie C. Robinson.....	81 00
Bertha Greenhalge.....	88 00
Ella J. Wright.....	88 00
Mary P. White.....	88 00
Frances E. Morrill.....	86 00
M. Ida Howe.....	52 00
Almeria L. Boynton.....	44 00
Ellen E. Merithew.....	13 00
Gertrude Sheldon.....	112 50
Josephine Sheldon.....	66 00
Mary E. Stone.....	90 00
Nellie M. Jones.....	89 00
Ellen A. Stillings.....	89 00
Belle T. Vinall.....	88 00
Alice M. Peabody.....	30 00
Abby F. Morrison.....	105 50
Anna C. Way.....	89 00
Marelyn M. Goward.....	62 00
Mrs. Sarah C. Wallace.....	31 25
Helen C. Frye.....	71 25
Sarah J. Gilman.....	78 00
Helen A. Bowers.....	36 00
Julia Leighton.....	60 00
Grace L. Sargent.....	29 00
Julia E. Keese.....	18 75
Ida M. Wilson.....	108 75
Annie C. Howe.....	90 00
Evelyn A. Norton.....	45 00
Kate W. Read.....	34 00
Emma E. Cooke.....	33 00
Sarah W. Paige.....	28 00
May M. Bement.....	24 00
Mary C. Hyde.....	28 00

Amounts carried forward,..... \$2,915 25 \$101,628 03

Amounts brought forward,..... \$2,915 25 \$101,628 03

Paid for EVENING SCHOOLS for IN-
STRUCTION:

To M. Abbie Morrison.....	27 00
Lilla M. Plaisted.....	25 00
Josie A. Paulint.....	25 00
Sarah E. Stevenson.....	28 00
M. Ella Russell.....	28 00
Lizzie H. Greene.....	28 00
Imogene F. Thomas.....	28 00
Abby Gilman.....	28 00
Grace L. Sargent.....	12 00
Delia T. Brady.....	28 00
Abbie A. Puffer.....	24 00
Sarah K. Hobson.....	26 00
Clara Howard.....	22 00
Dora Collins.....	22 00
Frances Horne.....	21 00
Flora Horne.....	21 00
Martha A. Paul.....	21 00
Grace H. Puffer.....	20 00
Walter B. Perkins.....	20 00
Clementine H. Bowers.....	28 00
Agnes I. Meldrum.....	27 00
Harriet A. Carle.....	25 00
Lucy J. Garrett.....	26 00
Nellie M. Tucker.....	25 00
Helen H. Boardman.....	89 00
Maria W. Roberts.....	26 00
Adelaide Baker.....	22 00
Jennie H. Reed.....	22 00
Stella J. Allen.....	27 00
Ella Howe.....	1 00
	<hr/>
	3,687 25

Paid for DRAWING SCHOOLS for IN-
STRUCTION:

To Channing Whitaker, ninety-five evenings	950 00
Channing Whitaker, for cash paid assis- tants	565 58
Bertram Harrison.....	400 00
Channing Whitaker, for preparing dia- grams, copies, materials, &c.....	243 12
	<hr/>

Amounts carried forward,..... \$5,845 95 \$101,628 03

Amounts brought forward,..... \$5,845 95 \$101,628 03

Paid for DRAWING SCHOOLS for IN-
STRUCTION :

To Bertram Harrison, for picture frames, Smith's Plates, drawing copies, and book of ornamental lettering, &c...	37 15
	<hr/>
	5,883 10

Paid for SUNDRIES for EVENING and
DRAWING SCHOOLS :

To Knapp & Morey, for printing and ad- vertising	29 75
Stone & Huse, for printing and adver- tising.....	35 50
Marden & Rowell, for printing and ad- vertising	39 50
Estate of B. H. Penhallow, for printing.	5 00
Edwin A. Hills, for printing and adver- tising	13 25
John L. Hunt, for printing and adver- tising	10 00
Adams & Co., for picture cord.....	1 75
Lowell Gas Light Company, for gas....	519 61
Joshua Merrill & Son, for books and stationery	355 84
W. S. Simons, for posting bills.....	2 00
Joseph L. Ross, for drawing stools....	170 96
Boston and Lowell and Nashua and Low- ell Railroad Co for freight	3 16
W. D. Allen, for services as janitor....	20 00
John Biggs, for services as janitor....	21 00
P. H. Chase, for services as janitor....	46 50
Asa B. Carle, for services as janitor....	21 00
James H. Hoyt, for services as janitor..	21 00
William Kennedy, for services as janitor.	36 00
L. P. Little, for services as janitor....	28 00
William Marks, for services as janitor..	24 00
L. H. Quimby, for services as janitor, &c.	81 25
H. N. Winslow, for services as janitor..	16 00
John Morrison, for rent of Mission School-house, and coal and wood....	33 00
Independent Union Mission, for rent of School room, damage to furniture and books.....	25 50

Amounts carried forward,..... \$7,442 67 \$101,628 03

<i>Amounts brought forward</i> ,.....	\$7,442 67	\$101,628,03
Paid for SUNDRIES for EVENING and DRAWING SCHOOLS :		
To H. C. Duganne, for cash paid for mak- ing entrance to room in Free Chapel, and fuel.....	34 78	
Howes & Burnham, for lumber.....	24 75	
Carleton & Hovey, for sponges.....	75	
	<hr/>	7,502 95
Paid for SUNDRIES :		
To Bickford Lang, for services as Truant Officer	333 32	
Jesse Huse, for services as Truant Offi- cer	333 32	
Reserved Fund, for expense of heating High School-house.....	528 77	
Appropriation for School-houses, for lumber	57 00	
Appropriation for Roads and Bridges, for fuel and labor.....	8,422 37	
Appropriation for Water Works, for la- bor, service pipe, and use of water..	931 27	
H. R. Barker & Co., for steam and gas fittings and fixtures, &c.....	1,891 47	
J. W. Proctor, for steam and gas fittings and fixtures, &c.....	284 75	
Hallowell & Wight, for hose pipes, hose couplings, sprinklers, filterers, &c..	52 83	
H. H. Wilder & Co., for sinks, pipe, solder, labor, &c.....	18 07	
J. W. Nash & Co., for stove pipe, repair- ing stoves, labor, &c.....	29 91	
Samuel Beck, for stoves, pipe, labor, &c.	176 97	
N. J. Wier & Co., for stoves, repairs, &c.	135 25	
T. Costello & Co., for stove pipe, repair- ing stoves, labor, &c.....	49 70	
S. G. Mack & Co., for stove, pipe, re- pairing stoves, &c.....	134 68	
C. B. Coburn & Co., for brushes, sperm oil, fire brick, fire clay, packing, feather dusters, mop handles, brim- stone, cod line, alcohol, shellac, &c.	192 25	
Jonathan Kendall, for alcohol, shellac, sperm oil, turpentine, benzine, lead, varnish, glass, &c.,.....	70 69	
<i>Amounts carried forward</i> ,.....	<hr/> \$13,642 62	<hr/> \$109,130 98

Amounts brought forward,..... \$13,642 62 \$109,130 98

Paid for SUNDRIES :

To Fiske & Spalding, for paper, lantern, &c.....	5 25
Sager Ashworth, for recutting files.....	9 41
Hildreth & Rice, for toilet stand, &c...	9 05
Isaac M. Cate, for flues.....	644 50
John Butcher, for iron.....	10 62
Cole & Nichols, for castings.....	83 70
Pevey Brothers, for chair stands.....	46 33
George L. Cady, for map hooks and screw eyes.....	18 88
Chamberlin & Jockow, for iron work...	7 50
A. H. & J. H. Abbott, for iron work...	7 35
William Dobbins, for castings and labor	28 94
Estate of William Dobbins, for iron, bolts, mouth-pieces, files, labor on boilers, &c.....	172 71
Trumbull & Co., for keys and repairs...	1 50
Jacob Rogers & Co., for hardware.....	399 00
Fielding & Bartlett, for hardware.....	35 06
H. B. Shattuck, for hardware.....	2 04
Adams & Co., for chairs and feather dusters.....	304 00
Benner Brothers, for piano stool, chairs, rope mats, clock, enamelled cloth, glass, waste basket, &c.....	283 51
Crosby Furniture Co., for mouldings for desk tops, dovetailing, &c.....	20 07
A. L. Brooks & Co., for lumber.....	31 14
Howes & Burnham, for lumber.....	19 46
E. M. Martin, for labor, milling lumber for desks.....	15 75
George N. Trowbridge & Son, for cherry wood circles.....	3 00
Milton Aldrich, for repairing piano leg.	68
M. C. Pratt & Co., for mouldings, lum- ber, sawing, teaming, labor, &c.....	94 86
J. G. Peabody & Sons, for doors.....	7 00
French & Puffer, for lantern.....	1 00
George Thatcher, for clocks, repairing clocks, bells, gongs, &c.....	123 25
Alfred Barney, for office baskets and pails.....	19 38
L. G. Howe, for cash paid for dusters...	31 25
Jane E. Clark, for tuition refunded....	17 40

Amounts carried forward,..... \$16,096 21 \$109,130 98

<i>Amounts brought forward,.....</i>	\$16,096 21	\$109,130 98
Paid for SUNDRIES :		
To J. P. Slocum, for inspecting boiler.....	1 50	
F. J. Libbey, for re-seating chairs.....	20 40	
Andrew Thissell, for cleaning vaults. . . .	10 00	
Nicholas P. Brown, for cleaning vaults, .	3 00	
Hallett, Davis & Co., for one grand piano	600 00	
A. A. Haggett, for expenses to Boston with W. G. Ward to purchase piano	6 00	
Irvin A. Foote, for tuning and repairing pianos.....	33 00	
C. W. Rugg, for moving piano from High School and return.....	22 00	
George Hobson, for moving piano from High to Sherman School-house....	5 00	
C. W. Rugg, for singing books.....	1 45	
C. P. Talbot & Co., for oxalic acid, soda, ash and potash.....	11 58	
Alanson Nichols, for cement and sand..	19 50	
D. M. Prescott & Co., for mason work..	24 50	
Page & Barnard, for mason work.....	235 24	
Bertram Harrison, for filling in High School diplomas.....	10 00	
Brooks, Owen & Carleton's Band, for music furnished, and arranging mu- sic at school exhibition.....	30 00	
Charles Morrill, for cash paid U. S. Mint for 12 "Carney Medals" ...	24 00	
Charles Morrill, for cash paid premium on the above Medals.....	3 60	
Charles Morrill, for cash paid express- age on Medals.....	1 15	
Charles Morrill, for cash paid for post- age stamps.....	6 00	
Thomas Hall, for philosophical appa- ratus (High School).....	46 75	
E. S. Ritchie & Sons, for repairing air pump (High School).....	8 84	
H. B. & W. O. Chamberlain, for spiral tube (High School).....	3 75	
Boston and Lowell Railroad Parcel De- partment, for expressage on philo- sophical apparatus (High School)...	1 50	
Carleton & Hovey, for materials used ex- perimenting with philosophical ap- paratus (High School).....	88 56	
<i>Amounts carried forward,.....</i>	\$17,313 53	\$109,130 98

Amounts brought forward,..... \$17,313 53 \$109,130 98

Paid for SUNDRIES :

To F. & E. Bailey, for materials used experimenting with philosophical apparatus (High School) and thermometers	13 01	
J. E. Griffin, for repairing pumps.....	19 97	
G. C. Blakeslee, for pumps	28 00	
William Roberts, for teaming.....	11 25	
James Leach, for teaming	4 25	
James Cowell, for teaming.....	3 75	
John White, for teaming.....	1 50	
F. B. Akers, for ringing bell (Franklin School-house).....	16 00	
Charles E. Graves, for ringing bell (Franklin-School house).....	8 00	
F. A. Burnham, for ringing bell (Franklin School-house).....	8 00	
William H. Jones, for ringing bell (Varnum School-house).....	18 00	
C. J. S. Palmer, for ringing bell (Varnum School-house).....	8 00	
Daniel Crowley, for ribbon for diplomas (High School).....	11 38	
H. Hosford & Co., for piano cover.....	7 00	
Shaw & Hight, for curtain cambric.....	1 50	
Marin & Jewett, for cambric.....	1 20	
Orlando N. Huse, for sawing wood.....	12 00	
Charles Frost, for corn brooms.....	28 50	
William Clifford, for labor on boilers...	3 75	
John McAleer, for labor.....	12 50	
W. E. Quant, for sweeping school rooms.	8 00	
L. H. Quimby, for tending boilers.....	12 00	
Frank Harrison, for taking care of school house.....	1 67	
		17,552 76
*To amount of Superintendent of Public Buildings' bills for the year 1873..	6,756 94	
		6,756 94
Whole expenditure for 1873.....	\$133,440 68	
Balance undrawn, January 1, 1874.....	11,079 96	
		\$144,520 64

* Of the Superintendent of Public Buildings' bills, the most of it was for building fires and cleaning School rooms.

SCHOOL-HOUSES.

Balance undrawn, January 1, 1873.....	\$9,631 15	
Appropriated and assessed in 1873.....	30,000 00	
	<hr/>	\$39,631 15

RECEIPTS.

Received into the Treasury from various sources.....	3,718 83	
	<hr/>	3,718 83
		<hr/>
		\$43,349 98
		<hr/> <hr/>

EXPENDITURES.

Paid for BUILDING SCHOOL-HOUSE
between HIGH, FAYETTE, CHEST-
NUT and EVERETT STREETS:
(Completed.)

To William H. Wiggin, for materials furnished, and labor performed on School-house on High Street.....	389 00	
D. M. Prescott & Co., for stock, labor, and teaming.....	45 50	
Whithed & Tallant, for concrete.....	34 80	
Warren C. Crosby, for drain pipe.....	11 70	
	<hr/>	†481 00
<i>Amount carried forward,.....</i>		<hr/> \$481 00

* See pages 9 and 10.

† Add to this amount \$14,486.99 expended to January 1st, 1873, makes the total cost of land and constructing the building \$14,967.99

Amount brought forward,..... \$481 00

Paid for COMPLETION of SCHOOL-
HOUSE on WORTHEN STREET:

To William H. Wiggin, for materials furnished, and labor.....	10,189 40	
H. R. Barker & Co., for steam boilers, pipe, fixtures, labor, &c.....	1,305 68	
Whithed & Tallant, for concrete.....	150 00	
Luther Kittredge & Son, for stone and labor.....	76 00	
Page & Barnard, for mason work and brick.....	119 63	
Chamberlin & Jockow, for hinges, hooks, staples, &c.....	47 95	
H. H. Wilder & Co., for iron sink.....	6 50	
Alanson Nichols, for brick and sand....	17 50	
Rollins & Sargent, for mason work.....	18 00	
Daniel McCarthy, for teaming.....	4 00	
	<hr/>	\$11,934 66

Paid for SITE for SCHOOL-HOUSE:

To Daniel Swan, for 7840 sq. feet of land with the buildings thereon on north-east corner of Kirk and Lee streets, as per deed.....	16,000 00	
John H. McAlvin, for cash paid for recording deed of the above.....	65	
	<hr/>	16,000 65

Paid for SUNDRIES:

To Merrimack Manufacturing Company, for rent of School-house, No. 12.....	47 00	
Howes & Burnham, for lumber.....	685 90	
A. L. Brooks & Co., for lumber.....	326 40	
H. & A. Whitney, for lumber.....	42 20	
Davis, Melendy & Sargent, for lumber..	3 62	
C. W. Saunders & Co., for lumber.....	50 00	
M. C. Pratt & Co., for lumber, mouldings, labor, &c.....	96 09	
William Kelley, for blinds, sash, &c....	207 00	
Griffin & Lake, for walnut stair rails, &c.....	17 95	
	<hr/>	
<i>Amounts carried forward</i> ,.....	\$1,476 16	\$28,416 31

* Add to this amount \$9,253 52 expended to January 1, 1873, makes the total cost of the building \$21,188 18.

<i>Amounts brought forward,.....</i>	\$1,476 16	\$28,416 31
Paid for SUNDRIES :		
To C. B. Coburn & Co., for lead, oil, paints, shellac, oil cans, glass, brimstone, putty, &c.....	266 18	
Jonathan Kendall, for putty, shellac, spirits turpentine, varnish, glass, lead, japan, paints, kerosene oil, brushes, alcohol, &c.	245 62	
Fiske & Spalding, for brushes, &c.....	7 48	
Samuel Farson, for labor painting.....	133 50	
Brown & Carter, for painting.....	11 00	
Colloid Paint Co., for paint.....	7 50	
Nathan Emerson, for painting.....	17 75	
Jacob Rogers & Co., for hardware.....	160 77	
Fielding & Bartlett, for hardware.....	93 01	
H. B. Shattuck, for hardware.....	17 13	
Charles E. Adams, for hardware.....	1 63	
Cole & Nichols, for castings.....	30 75	
American Bolt Co., for bolts, &c.....	3 60	
John Butcher, for iron.....	28 47	
Chamberlin & Jockow, for hinges, and hooks.....	6 90	
J. E. Conant, for services selling School- house on Tilden street.....	25 00	
Wilkins & Austin, for lightning rod....	112 50	
Page & Barnard, for mason work.....	119 37	
Bennett & Moulton, for mason work....	19 77	
D. M. Prescott & Co., for stock, and ma- son work.....	478 80	
F. Frye & Co., for brick, lime, cement, mason work, &c.....	820 12	
N. T. Staples & Sons, for drain pipe, ce- ment, and labor.....	101 09	
William Clifford, for mason work.....	10 50	
John Wheeler, for whitewashing	6 87	
John Burch & Co., for whitewashing...	95 00	
M. B. Caswell, for whitewashing.....	18 00	
J. L. Powers, for whitewashing.....	18 00	
T. A. Sanborn, for whitewashing.....	5 00	
Warren C. Crosby, for drain pipe.....	160 90	
Luther Kittredge & Son, for stone, use of derrick, labor, &c.....	5,396 91	
W. E. Livingston, for brick, cement, &c.	12 27	
Alanson Nichols, for cement, lime, sand, and brick.....	139 15	
<i>Amounts carried forward,.....</i>	<u>\$10,046 70</u>	<u>\$28,416 31</u>

Amounts brought forward,..... \$10,046 70 \$28,416 31

Paid for SUNDRIES :

To Davis & Co., for stone, and labor.....	70 92
Runels & Davis, for stone, and labor ..	57 71
John Pettingell, for chimney cap.....	6 00
C. W. Kimball for stone, and sand.....	23 00
Appleton Company, for earth filling....	11 25
Appleton St. Cong. Society, for gravel..	108 75
E. A. & A. T. Smith for concrete.....	217 80
Whithed & Tallant, for concrete.....	108 78
Middlesex Company, for drawing off pond on Concord River.....	12 00
John C. Bennett, for rubber moulding..	6 47
H. H. Wilder & Co., for registers, sinks, pipe, furnace stones, &c.....	86 79
S. G. Mack & Co., for stove pipe, repair- ing stoves, &c.....	46 31
E. A. Walleston, for wrench, piping, la- bor, &c.....	12 61
William Waugh, for slate, zinc, labor, &c.....	129 23
C. P. Talbot & Co., for soda ash, and muriatic acid.....	5 28
L. & L. J. Richards, for moving school- house from Worthen street to Car- ter street.....	400 00
O. A. Simpson, for teaming.....	25 25
B. N. Pollard, for teaming.....	12 15
Alphonso Merrill, for teaming.....	4 50
John White, for teaming.....	1 75
James Leach, for teaming.....	2 00
Daniel McCarthy, for teaming.....	2 50
E. W. Copeland, for teaming.....	3 75
Michael Brady, for teaming.....	12 50
Daniel W. Lane, for teaming.....	13 62
G. B. Wetherbee, for teaming.....	21 25
William Hyatt, for teaming.....	16 50
William Roberts, for teaming.....	16 75
L. J. Richards, for use of jack screws...	3 00
James Biggs, for cash paid for teaming..	1 50
Appropriation for Roads and Bridges, for edgestone, concrete, blacksmith work, bolts, washers, labor, &c....	183 53
Appropriation for Sewers and Drains, for sewer assessments.....	436 07

Amounts carried forward,..... \$12,106 22 \$28,416 31

<i>Amounts brought forward,.....</i>	\$12,106 22	\$28,416 31
Paid for SUNDRIES :		
To Appropriation for Fire Department, for sheathing.....	7 50	
	<hr/>	12,113 72
To amount of Superintendent of Public Buildings' bills for the year.....	2,131 48	
	<hr/>	2,131 48
Whole expenditures for the year.....		42,661 51
Balance undrawn, January 1, 1874.....		688 47
		<hr/>
		\$43,349 98
		<hr/>

ROADS AND BRIDGES.

Balance undrawn January 1, 1873.....	\$7,025 82	
Appropriated and assessed in 1873.....	75,000 00	
	<hr/>	\$82,025 82

RECEIPTS.

Received for SIDEWALK ASSESS-
MENTS, MATERIALS, and other
STREET ACCOUNTS:

IN JANUARY,

Of A. H. Abbott, for sidewalk assessment.	46 36	
Samuel Horne, for sidewalk assessment.	230 76	
George Webster, for sidewalk assessment	80 16	
E. F. Hayden, for sidewalk assessment.	44 23	
Cyrus P. Barclay, for sidewalk assess- ment.....	96 61	
Robert Booth, for sidewalk assessment..	31 60	
Nathaniel Stearns, for sidewalk assess- ment.....	210 00	
J. S. Phillips, for sidewalk assessment..	264 93	
Moses W. Emerson, for sidewalk assess- ment.....	38 97	
John A. Wilson, for sidewalk assessment.	52 66	
Samuel Farson, for sidewalk assessment.	89 19	
Elbridge G. Heath, for sidewalk assess- ment.....	45 98	
John T. Lee, for labor and stone.....	32 00	
	<hr/>	1,263 45

IN FEBRUARY.

Of Rebecca McLane, for sidewalk assess- ment.....	50 10	
C. B. Emerson, for sidewalk assessment.	64 44	
	<hr/>	
<i>Amounts carried forward,.....</i>	\$114 54	\$83,289 27

<i>Amounts brought forward,.....</i>	\$114 54	\$83,289 27
Received for SIDEWALK ASSESS- MENTS, MATERIALS, and other STREET ACCOUNTS:		
Of A. E. Spalding, for sidewalk assessment.	58 90	
H. W. Allen, for sidewalk assessment...	106 70	
D. H. Bradt, for sidewalk assessment...	45 51	
Michael Murphy, for sidewalk assess- ment.....	40 02	
Lawrence Stephens, for sidewalk assess- ment.....	46 54	
Judith Downing, for sidewalk assess- ment.....	141 68	
James Morris, for sidewalk assessment...	101 45	
D. Kittredge, for sidewalk assessment...	96 16	
Charles Hubbard, for sidewalk assess- ment.....	78 62	
Town of Dracut, for iron pipe.....	18 50	
John C. Woodward, for one yoke of oxen.	287 94	
P. Whiting, for street scrapings.....	12 67	
Boott Cotton Mills, for edgestone.....	139 58	
		1,288 81
IN MARCH.		
Of John C. Woodward, for one yoke of oxen	195 00	
Charles Stott, for teaming.....	90 00	
		285 00
IN APRIL.		
Of William Kittredge, for labor.....	111 00	
R. Southwick, for labor and pipe.....	32 05	
J. C. Woodward, for horse.....	100 00	
J. C. Woodward, for labor.....	9 00	
George Mansur, for wood and coal.....	4 62	
Levi Sprague, for coal.....	24 00	
S. N. Wood, for street scrapings.....	6 00	
E. T. Perley, for sidewalk assessment...	51 79	
Allen, Horne & Whiting, for sidewalk assessment.....	20 00	
		358 46
IN MAY.		
Of Lowell Horse R. R. Co., for paving....	93 38	
J. C. Woodward, for street scrapings and wood.....	234 50	
<i>Amounts carried forward,.....</i>	\$327 88	\$85,221 54

<i>Amounts brought forward,.....</i>	\$325 88	\$85,221 54
Received for SIDEWALK ASSESS- MENTS, MATERIALS, and other STREET ACCOUNTS:		
Of J. C. Woodward, for one horse.....	110 00	
Joshua B. Varnum, for sidewalk assess- ment.....	58 40	
J. W. Hart for sidewalk, assessment...	57 89	
A. Balchelder & Co., for sidewalk assess- ment.....	92 69	
J. Bachelder, for sidewalk assessment...	46 89	
H. A. Whiting & Co., for sidewalk assess- ment.....	115 09	
Allen, Horne & Whiting & Co., for side- walk assessment.....	20 00	
Bartlett Davis, for sidewalk assessment..	53 75	
E. A. Dugdale, for sidewalk assessment...	39 64	
Silas Ferrin, for sidewalk assessment...	61 89	
Amos S. Brown, for sidewalk assessment	177 02	
Sybil Brown, for sidewalk assessment...	48 22	
G. P. Woodward, for sidewalk assessment	48 50	
Geo. P. Walker, for sidewalk assessment,	43 89	
Asa Preston, for sidewalk assessment...	24 49	
N. G. Furnald, for sidewalk assessment.	141 41	
H. E. Hill, for sidewalk assessment....	75 48	
		1,543 13

IN JUNE.

Of Charles T. Goddard, for sidewalk assess- ment.....	105 96	
Heirs of P. Maguire, for sidewalk assess- ment.....	164 20	
Riley Davis, for sidewalk assessment...	38 33	
A. P. Bateman, for sidewalk assessment	37 04	
J. W. Marsh, for sidewalk assessment..	38 19	
M. G. Perkins, for sidewalk assessment.	60 68	
Heirs of Jesse Smith, for sidewalk as- sessment.....	106 14	
Isaac Hale, for sidewalk assessment....	72 26	
Abram French, for sidewalk assessment	63 60	
Charles H. Robbins, for sidewalk assess- ment.....	168 07	
A. C. Wheelock, for sidewalk assessment	57 36	
H. A. Whiting & Co., for sidewalk assess- ment.....	134 77	
<i>Amounts carried forward,.....</i>	\$1,046 60	\$86,764 67

<i>Amounts brought forward,.....</i>	\$1,046 60	\$86,764 67
Received for SIDEWALK ASSESS- MENTS, MATERIALS, and other STREET ACCOUNTS :		
Of Allen, Horne and Whiting, for sidewalk assessment.....	20 00	
Frank R. Hyde, for sidewalk assessment	29 26	
Heirs of David Hyde, for sidewalk as- sessment.....	29 14	
Mrs. L. J. Bowers, for sidewalk assess- ment.....	47 52	
Wm. Bascom, for sidewalk assessment..	67 71	
E. R. Blair, for sidewalk assessment...	138 59	
Alex. Stephens, for sidewalk assessment	77 82	
John Dennin, for visit by City Physi- cian at Police Station.....	2 00	
Appropriation for School-Houses, for la- bor.....	19 30	
Appropriation for Sewers and Drains, for labor.....	357 12	
Appropriation for Police, for labor and fuel.....	141 50	
Appropriation for Lighting Streets and Public Buildings, for labor,.....	67 07	
Appropriation for Health Account, for la- bor.....	141 90	
Appropriation for Schools, for fuel.....	6,086 74	
H. E. Hill, for labor.....	4 25	
Catherine Short, (overdraft).....	100 00	
		8,376 52

IN JULY.

Of Henry Cheever, for sidewalk assessment	52 78	
Hugh McEvoy, for sidewalk assessment	132 60	
John F. Manahan, for sidewalk assess- ment.....	53 34	
Henry P. Clough, for sidewalk assess- ment.....	137 98	
Daniel Cushing, for sidewalk assessment	117 22	
Mrs. E. Ellis, for sidewalk assessment..	86 96	
S. P. Marin, for sidewalk assessment...	40 95	
Mary A. Beard, for sidewalk assessment	112 18	
J. Ansart, for sidewalk assessment.....	38 18	
Joel M. Thurston, for sidewalk assess- ment.....	30 85	
<i>Amounts carried forward,.....</i>	\$803 04	\$95,141 19

<i>Amounts brought forward,.....</i>	\$803 04	\$95,141 19
Received for SIDEWALK ASSESS- MENTS, MATERIALS, and other STREET ACCOUNTS:		
Of Mrs. George W. Page, for sidewalk as- sessment.....	43 10	
William Kelley, for sidewalk assessment	238 64	
George D. B. Kelley, for sidewalk assess- ment.....	48 66	
F. Carll, for sidewalk assessment.....	47 17	
George Durant, for sidewalk assessment	64 39	
J. C. Ayer, for sidewalk assessment....	132 30	
J. C. Ayer, for sidewalk assessment....	466 96	
William H. Anderson, for labor.....	11 24	
Josiah Gates, for labor.....	6 25	
Edward F. Coburn, for edgestone.....	29 82	
Appropriation for Sewers and Drains, for labor and oil.....	29 00	
Appropriation for Lighting Streets and Public Buildings, for labor.....	15 50	
Appropriations for Police, for wood and coal.....	410 50	
Reserved Fund, for wood, coal and labor.	3,077 64	
Appropriation for Schools, for wood, and coal.....	537 00	
L. W. Slade, for edgestone and concrete	9 42	
F. E. Wolstenholme, for concrete.....	5 28	
R. Kitson, for edgestone and concrete...	111 24	
M. A. Johnson, for edgestone and paving.	17 75	
E. B. Patch, for old plank.....	78 00	
E. S. Hylan, for edgestone.....	79 32	
J. C. Woodward, for wood, coal, and la- bor.....	117 82	
Joseph F. Dean & Co., for freight on coal.....	744 35	
F. Carll, for edgestone and concrete....	56 88	
D. Livingston, for edgestone and con- crete.....	145 50	
Lowell Horse R. R. Co., for labor, sand, and paving.....	176 87	
	<hr/>	7,503 64
IN AUGUST.		
Of P. H. Carleton, for sidewalk assessment.	64 90	
Otis Allen, for sidewalk assessment....	100 44	
<i>Amounts carried forward,.....</i>	\$165 34	\$102,644 83

<i>Amounts brought forward</i> ,.....	\$165 34	\$102,644 83
Received for SIDEWALK ASSESS- MENTS, MATERIALS, and other STREET ACCOUNTS:		
Of Wm. H. Ramsdell, for sidewalk assess- ment.....	44 13	
Charles E. Brown, for sidewalk assess- ment	52 66	
Proprietors of Locks and Canals on Mer- rimack River, for sidewalk assess- ment	176 47	
Isaac Paige, for sidewalk assessment...	108 03	
Paul F. Litchfield, for sidewalk assess- ment.....	71 11	
George B. Sylvester, for sidewalk assess- ment.....	44 34	
A. W. Bailey, for sidewalk assessment...	130 57	
Daniel F. Mitchell, for sidewalk assess- ment.....	76 52	
J. C. Woodward, for plank, wood, labor, street scrapings, scrap iron, and earth	228 50	
S. C. Smith, for edgestone.....	20 52	
E. B. Patch, for hauling gravel.....	64 00	
Appropriation for Water Works, for la- bor and material.....	994 53	
Appropriation for Fire Department, for labor and material.....	286 46	
Appropriation for Sewers and Drains, for labor.....	179 75	
Appropriation for Commons, for labor and material	1,583 03	
Appropriation for Lighting Streets and Public Buildings, for labor.....	22 19	
	<hr/>	4,248 15

IN SEPTEMBER.

Of A. W. Burnham, for sidewalk assess- ment.....	58 80	
Heirs of Avery Marshall, for sidewalk assessment.....	47 65	
R. S. Hamlin, for sidewalk assessment..	49 03	
E. Cleaves, for sidewalk assessment....	58 02	
William Lugg, for sidewalk assessment..	66 71	
S. S. Fisher, for sidewalk assessment..	41 10	
<i>Amounts carried forward</i> ,.....	<hr/> \$321 36	<hr/> \$106,892 98

<i>Amounts brought forward,.....</i>	\$321 36	\$106,892 98
Received for SIDEWALK ASSESS- MENTS, MATERIALS, and other STREET ACCOUNTS:		
Of John T. Lee, for sidewalk assessment...	98 90	
Wm. H. Anderson, for sidewalk assess- ment.....	86 68	
Charles Gould, for sidewalk assessment..	46 86	
W. D. Harriman, for sidewalk assess- ment.....	41 46	
A. Lawrence, for sidewalk assessment..	42 42	
H. G. Burgess, for sidewalk assessment.	41 70	
J. S. Whitney, for sidewalk assessment.	67 01	
L. Kittredge, for sidewalk assessment..	33 06	
L. F. Kittredge, for sidewalk assessment.	40 32	
E. J. Medina, for sidewalk assessment..	106 54	
E. J. Medina, for sidewalk assessment..	72 28	
E. J. Medina, for sidewalk assessment..	87 03	
Mary E. Delary, for sidewalk assess- ment.....	30 12	
Geo. F. Penniman, for sidewalk assess- ment.....	120 90	
Jane Halleran, for sidewalk assessment..	29 82	
P. Whiting, for edgestone.....	71 10	
A. L. Russell, for edgestone.....	43 08	
I. N. Fitts, for edgestone and concrete...	100 20	
Mrs. H. M. Hooke, for edgestone and concrete	107 54	
Appropriation for School-Houses, for la- bor	50 50	
Appropriation for Paupers, for labor, and material.....	1,427 10	
Appropriation for Lighting Streets and Public Buildings, for labor.....	29 75	
Appropriation for Fire Department, for labor.....	35 00	
Reserved Fund, for labor.....	19 25	
Appropriation for Commons, for labor..	1,103 98	
Appropriation for Health Account, for labor	199 50	
Appropriation for Sewers and Drains, for labor	815 73	
W. G. Morse, for edgestone.....	54 60	
J. C. Woodward, for wood and street scrapings	65 00	
		5,388 79
<i>Amount carried forward,.....</i>		\$112,281 77

Amount brought forward,..... \$112,281 77

Received for SIDEWALK ASSESS-
MENTS, MATERIALS, and other
STREET ACCOUNTS:

IN OCTOBER.

Of Martha R. Cox, for sidewalk assessment.	44 88
Amasa Pratt, for sidewalk assessment...	75 00
James H. Joyce, for sidewalk assess- ment.....	30 00
P. Whiting, for sidewalk assessment....	77 61
Jacob Ames, for sidewalk assessment...	48 06
Mrs. A. Cummings, for sidewalk assess- ment.....	48 30
Philip Eastman, for sidewalk assessment	44 88
N. J. N. Bacheller, for sidewalk assess- ment	48 95
Michael McMorro, for sidewalk assess- ment.....	59 42
H. A. Whiting & Co., for sidewalk as- sessment	45 00
W. A. Ingham, for sidewalk assessment.	78 57
Ezra W. Wright, for sidewalk assess- ment	40 92
S. E. Hubbard, for sidewalk assessment.	28 50
A. W. Burnham, for sidewalk assess- ment.....	96 10
Mrs. W. Connolly, for sidewalk assess- ment.....	33 42
G. B. Farnham, for sidewalk assessment.	47 94
C. D. Barrows, for sidewalk assessment..	119 43
Henry Carll, for sidewalk assessment...	145 54
John Scott, for sidewalk assessment	48 12
J. B. Varnum, for sidewalk assessment..	26 94
Francis Jewett, for edgestone.....	191 92
S. N. Wood, for edgestone.....	103 03
Appropriation for School-Houses, for la- bor.....	10 80
Appropriation for Water Works, for la- bor	1,167 75
Appropriation for Schools, for labor....	6 00
Appropriation for Sewers and Drains, for labor	839 87
Appropriation for Health Account, for labor.....	52 00
Appropriation for Commons, for labor..	500 38

Amounts carried forward,..... \$4,059 33 \$112,281 77

<i>Amounts brought forward,.....</i>	\$4,059 33	\$112,281 77
Received for SIDEWALK ASSESS- MENTS, MATERIALS, and other STREET ACCOUNTS:		
Of Appropriation for Fire Department, for labor	43 14	
Appropriation for Lighting Streets and Public Buildings, for labor.....	78 69	
Appropriation for Repairs of Public Buildings, for labor.....	2 00	
Lowell Horse R. R. Co., for labor.....	215 70	
Lowell Horse R. R. Co., for paving.....	243 80	
G. E. Mitchell, for edgestone.	25 20	
Benjamin Lawrence, for edgestone.....	17 52	
J. C. Woodward, for street scrapings, wood, stone and earth.....	71 73	
		4,757 11

IN NOVEMBER.

Of D. F. Mitchell, for sidewalk assessment..	94 29	
G. W. Harris, for sidewalk assessment..	147 38	
G. W. Knowlton, for sidewalk assessment	27 24	
Estate of John Rollins, for sidewalk as- sessment.....	38 12	
C. B. Emerson, for sidewalk assessment..	149 59	
G. W. Rix, for sidewalk assessment....	59 82	
Daniel Luke, for sidewalk assessment....	51 67	
Leonard Brown, for sidewalk assessment.	61 32	
Charles Spofford, for sidewalk assessment	46 23	
Charles Heald, for sidewalk assessment..	33 88	
Lydia N. Ford, for sidewalk assessment..	31 80	
S. C. Eaton and B. Mathews, for sidewalk assessment	82 52	
S. C. Eaton, for sidewalk assessment...	46 83	
S. C. Eaton, for sidewalk assessment....	48 36	
Margaret Blake, for sidewalk assessment	30 28	
Mrs. Elizabeth Booth, for sidewalk as- sessment.....	36 94	
Mrs. Elizabeth Booth, for sidewalk as- sessment.....	56 10	
Heirs of V. Hutchinson, for sidewalk as- sessment.....	53 01	
Patrick Mead, for sidewalk assessment..	44 47	
Patrick Mead, for sidewalk assessment..	32 24	
John Lennon, for sidewalk assessment..	125 75	

<i>Amounts carried forward,.....</i>	\$1,300 84	\$117,038 88
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Amounts brought forward,..... \$1,300 84 \$117,038 88

Received for SIDEWALK ASSESS-
MENTS, MATERIALS, and other
STREET ACCOUNTS :

Of John Lennon, for sidewalk assessment...	77 56	
Daniel Gage, for sidewalk assessment...	195 60	
Mrs. Joseph Neal, for sidewalk assess- ment.....	86 77	
Mrs. B. Livingston, for sidewalk assess- ment.....	86 96	
J. C. Woodward, for labor, coal, wood, stone and iron.....	288 00	
Appropriation for Health Account, for labor.....	54 00	
Appropriation for Water Works, for la- bor, and material.....	340 01	
Appropriation for City Library, for saw- dust.....	1 00	
Appropriation for Lighting Streets and Public Buildings, for labor.....	54 37	
Appropriation for Commons, for labor...	9 38	
Appropriation for Paupers, for labor, and material.....	262 50	
Appropriation for Police, for wood.....	11 25	
Appropriation for Fire Department, for coal.....	90 00	
Appropriation for Sewers and Drains, for labor and material.....	899 51	
Appropriation for Schools, for labor and material.....	85 00	
Appropriation for School-Houses, for edgestone, and concrete.....	96 93	
Reserved Fund, for labor and material..	67 02	
E. A. & A. T. Smith, for plank.....	8 73	
	<hr/>	4,015 43

IN DECEMBER.

Of G. S. Cheney, for sidewalk assessment...	140 72	
John Smiley, for sidewalk assessment...	63 72	
W. Fletcher, for sidewalk assessment...	43 92	
Wm. Phesey, for sidewalk assessment...	41 28	
Alfred Barney, for sidewalk assessment..	51 46	
Owen Fallon, for sidewalk assessment...	34 31	
J. A. Patten, for sidewalk assessment...	25 74	
E. E. Lapham, for sidewalk assessment..	28 31	
	<hr/>	
<i>Amounts carried forward</i> ,.....	\$429 46	\$121,054 31

<i>Amounts brought forward,.....</i>	\$429 46	\$121,054 31
Received for SIDEWALK ASSESS- MENTS, MATERIALS, and other STREET ACCOUNTS:		
Of George Winslow, for sidewalk assessment.	47 58	
A. Ambrose, for sidewalk assessment....	87 11	
E. A. Smith, for sidewalk assessment....	99 48	
E. A. Smith, for sidewalk assessment..	95 58	
A. T. Smith, for sidewalk assessment....	57 24	
R. Pendergast, for sidewalk assessment.	36 00	
R. Pendergast, for sidewalk assessment..	25 14	
Heirs of N. S. Geer, for sidewalk assess- ment.....	92 54	
Wm. Seaver, for sidewalk assessment....	24 05	
Mrs. L. B. Richardson, for sidewalk as- sessment.....	50 00	
A. C. Persons, for sidewalk assessment..	46 44	
Lowell Gas Light Co., for sidewalk as- sessment.....	646 25	
Michael Conley, for sidewalk assessment.	29 95	
Carlos Hazen, for sidewalk assessment..	46 56	
Wm. Hunter, for sidewalk assessment....	20 39	
Susan Calef, for sidewalk assessment....	53 40	
Mrs. S. Sprague, for sidewalk assessment.	35 24	
E. G. Richardson, for sidewalk assess- ment.....	103 65	
John Trowbridge, for sidewalk assess- ment.....	30 38	
Heirs of Jesse Foster, for sidewalk assess- ment.....	109 46	
Samuel Lakin, for sidewalk assessment..	89 52	
Gerry Wilson, for sidewalk assessment..	24 06	
O. F. Osgood, for sidewalk assessment..	32 04	
Mary A. Scott, for sidewalk assessment..	55 92	
E. N. Parkhurst, for sidewalk assess- ment.....	38 28	
G. Leighton, for sidewalk assessment....	63 36	
C. C. Pickering, for sidewalk assessment.	57 25	
Frank R. Hyde, for sidewalk assessment,	39 48	
Hamilton J. Sawyer, for sidewalk assess- ment.....	70 44	
R. Butterfield, for sidewalk assessment..	161 40	
R. Butterfield, for sidewalk assessment..	59 64	
H. A. Whiting & Co., for sidewalk as- sessment.....	153 42	
W. R. Batchelder, for sidewalk assessment	43 16	
<i>Amounts carried forward,.....</i>	\$3,053 87	\$121,054 31

<i>Amounts brought forward,.....</i>	\$3,053 87	\$121,054 31
Received for SIDEWALK ASSESS- MENTS, MATERIALS, and other STREET ACCOUNTS:		
Of W. G. Chase, for sidewalk assessment...	45 87	
G. F. Willey, for sidewalk assessment....	44 48	
Wm. Courtney, for edgestone.....	22 80	
J. C. Woodward, for stone, wood, coal, labor and street scrapings.....	531 95	
J. C. Woodward, for labor repairing driveway at Jail.....	23 62	
Otis Allen, for edgestone.....	16 00	
J. F. Dean & Co., for short weight on coal	196 85	
Charles Stott, for edgestone	34 40	
W. R. Batchelder, for edgestone.....	51 84	
N. G. Furnald, for edgestone.....	44 55	
J. W. Bennett, for brick building, Cen- tral street.....	239 00	
Andrew W. Smith, for wooden building, Central street.....	120 00	
Appropriation for Paupers, for fuel....	185 50	
Appropriation for Police, for wood and coal.....	29 48	
Appropriation for Fire Department, for labor and material.....	46 80	
Appropriation for Sewers and Drains, for labor and material.....	324 00	
Appropriation for Commons, for labor and material	113 89	
Appropriation for Lighting Streets and Public Buildings, for labor and ma- terial	37 05	
Appropriation for Repairs of Public Buildings, for labor and material...	10 70	
Appropriation for Schools, for labor and material.....	370 38	
Appropriation for Water Works, for wood and labor.....	111 75	
Reserved Fund, for labor and material..	186 45	
		5,841 23
Transferred from Appropriation for City Debt.....	30,000 00	
		30,000 00
Tranferred from Appropriation for Interest on Water Works.....	15,000 00	
		15,000 00
		<u>\$171,895 54</u>

EXPENDITURES.

Paid for LABOR, as per monthly pay-rolls :

In January.....	\$3,089 93	
February.....	2,584 92	
March.....	2,146 21	
April.....	2,702 19	
May.....	4,045 87	
June.....	4,444 90	
July.....	3,964 96	
August.....	3,766 04	
September.....	3,728 71	
October.....	4,082 40	
November.....	3,197 39	
December.....	1,602 88	
	<hr/>	39,356 40

Paid for HAY, GRAIN, &c. :

To Appropriation for Paupers, for hay and carrots.....	277 45	
George S. Butters, for hay and straw...	130 32	
E. A. Clement, for oats.....	131 59	
Sydney Davis, for straw.....	66 08	
Dodge, Sherburne & Co., for grain and meal.....	354 14	
Edwin Duren, for mowing grass.....	8 00	
W. H. H. Durkee, for hay.....	130 97	
Seth Gage, for hay.....	402 78	
W. A. Giles, for hay.....	48 20	
J. H. Hoar, for hay.....	71 63	
Wm. E. Livingston, for grain and meal..	364 95	
W. H. Leavitt, for hay.....	173 70	
Litchfield & Co., for hay.....	41 78	
Alanson Nichols, for straw.....	61 80	
J. L. Noyes, for hay.....	6 94	
G. W. Norris, for hay, &c.....	150 38	
Peabody & Richardson, for oats.....	326 78	
Richardson & Wier, for hay.....	79 73	
Luther Richards, for straw.....	12 08	
Rufus Rogers, for grain and meal.....	71 25	
Rogers & Lord, for grain and meal....	272 17	
A. & E. G. Spalding, for hay.....	14 25	
Stiles, Rogers & Co., for grain and meal.	554 26	
John C. Woodward, for hay.....	20 00	
	<hr/>	
<i>Amounts carried forward,.....</i>	\$3,771 23	\$39,356 40

<i>Amounts brought forward</i> ,.....	\$2,771 23	\$39,356 40
Paid for HAY, GRAIN, &c :		
To Alva Wright, for hay.....	83 99	
Samuel N. Wood & Son, for grain and meal.....	215 94	
		4,071 16
Paid for LUMBER, STONE, BRICK, CEMENT, &c. :		
To Benjamin Palmer, for block-paving, edgestone, &c.....	4,128 89	
William Reed, for block-paving.....	4,689 13	
Reed & Palmer, for block-paving.....	432 67	
Noah Prescott, for curbstone.....	38 57	
George W. Pearson, for stone post.....	60 00	
Clough & Sweatt, for block-paving, edgestone, &c.....	3,347 30	
Samuel Fletcher, for block-paving and edgestone.....	1,611 77	
James Maxwell, for edgestone.....	536 36	
David Reed, for block-paving.....	1,126 00	
N. Perham & Co., for edgestone.....	34 54	
N. & P. Perham, for edgestone.....	251 16	
Pierce Perham, for edgestone.....	391 86	
George F. Parker, for edgestone.....	766 12	
Silas B. Thompson, for block-paving....	32 20	
John Eaton, for block-paving.....	1,267 16	
Eaton & Prescott, for flagging.....	149 45	
Everett Hutchinson, for edgestone, &c..	867 47	
W. E. Hill, for edgestone.....	1,127 57	
A. Jennings, for edgestone.....	961 20	
Henry Lewis & Co., for edgestone.....	162 80	
Alexander Martin, for block-paving....	159 37	
C. B. Carter, for edgestone.....	441 32	
Daniel Cram, for edgestone.....	716 23	
A. E. Carlton, for edgestone.....	1,150 43	
Daniel Cushing, for edgestone.....	1 80	
Luther Kittredge & Son, for stone and labor.....	173 06	
Massachusetts Cotton Mills, for drawing paving.....	21 75	
Bennett & Moulton, for brick.....	150 00	
C. W. Kimball, for sand.....	100 50	
E. A. & A. T. Smith, for concrete paving, &c.....	14,254 42	
Whithed & Tallant, for concrete paving.	2,674 92	
<i>Amounts carried forward</i> ,.....	\$41,826 02	\$43,427 56

<i>Amounts brought forward</i> ,.....	\$41,826 02	\$43,427 56
Paid for LUMBER, STONE, BRICK, CEMENT, &c.:		
To Appropriation for School-Houses for con- crete.....	15 13	
Boston and Lowell and Nashua and Low- ell Railroad Corporation, for freight on stone, &c.....	2,012 70	
N. W. Norcross, for wood-paving (Cen- tral Bridge).....	4,441 50	
Rolf, Tyler & Co., for lumber.....	605 01	
Proprietors of Locks and Canals on Mer- rimack River, for kyanizing plank..	362 36	
H. & A. Whitney, for lumber	989 19	
A. & E. G. Spalding, for lumber.....	138 20	
C. W. Saunders & Co., for lumber.....	24 22	
A. L. Brooks & Co., for lumber.....	3 50	
M. C. Pratt & Co., for sawing and plan- ing lumber.....	74 14	
	<hr/>	50,491 97
Paid for FUEL:		
To Joseph F. Dean & Co., for coal.....	8,447 16	
Framingham and Lowell Railroad, for freight on coal.....	1,319 76	
Boston, Clinton and Fitchburg Railroad, for freight on coal.....	1,120 03	
Alanson Nichols, for coal.....	74 65	
W. E. Livingston, for coal.....	12 90	
D. W. Horne, for weighing coal.....	31 25	
Noah Prescott, for wood.....	396 74	
A. N. & E. G. Spalding, for wood.....	350 23	
Cyrus Hamlin, for wood.....	259 63	
	<hr/>	12,012 35
Paid for BLACKSMITH WORK, RE- PAIRING CARRIAGES, HARNESS- ES, IRON, &c.:		
To Sager Ashworth, for re-cutting files, &c..	24 86	
American Bolt Co., for bolts.....	3 10	
John G. Allen, for team harness and bridle fronts.....	83 00	
A. H. & J. H. Abbott, for ironing sleigh, painting and repairing cari- riages, &c.....	83 33	
	<hr/>	
<i>Amounts carried forward</i> ,.....	\$194 29	\$105,931 88

<i>Amounts brought forward</i> ,.....	\$194 29	\$105,931 88
Paid for BLACKSMITH WORK, REPAIRING CARRIAGES, HARNESS-ES, IRON, &c.:		
To John Butcher, for iron, steel, borax, &c..	526 71	
W. P. Brazer & Co., for blankets and buffalo robes.....	55 00	
S. L. Butman, for harnesses, repairing harnesses, &c.....	288 65	
J. A. Brabrook, for harnesses and repairs.....	59 24	
G. W. Dowlin, for horse collars.....	14 00	
Sawyer & Taylor, for repairing harnesses, &c.....	12 55	
Pevey Brothers, for castings.....	27 45	
Cole & Nichols, for castings.....	27 78	
Dodge, Gilbert & Co., for axles, &c....	40 92	
B. I. Peabody, for hubs and spokes.....	14 02	
Luther Richards, for traverse runner sleigh.....	50 00	
Swasey & Grow, for steel scrapers.....	2 00	
A. M. & C. M. Wood, for hubs, spokes, dashers, shafts, mortising, &c.....	35 45	
Boston & Lowell Railroad Co's Fast Freight Department, for freight on spokes, &c.....	1 10	
Boston and Lowell and Nashua and Lowell Railroad Corp., for freight on spokes and hubs.....	36	
	<hr/>	1,349 52
Paid SUPERINTENDENT OF STREETS AND CIVIL ENGINEER:		
To Luther Richards, Superintendent of Streets (salary).....	24 66	
John C. Woodward, Superintendent of Streets (salary).....	1,770 41	
Richard W. Baker, Civil Engineer (salary).....	1,800 00	
	<hr/>	3,595 07
Paid for LAND and BUILDINGS for EXTENSION of APPLETON ST.:		
To Edward Sheahan (as per Resolution)... Trustees of D. W. Beals (as per Resolution).....	12,000 00	
	8,259 33	
	<hr/>	
<i>Amounts carried forward</i> ,.....	\$20,259 33	\$110,876 47

<i>Amounts brought forward</i> ,.....	\$20,259 33	\$110,876 47
Paid for LAND and BUILDINGS for EXTENSION of APPLETON ST.:		
To Hocum Hosford and Arthur G. Pollard (as per Resolution).....	7,500	
James Devlin (as per Resolution).....	500 00	
William Nichols, for services as ap- praiser on D. W. Beals' estate.....	20 00	
Addison Putnam, for services as ap- praiser on D. W. Beals' estate.....	20 00	
A. E. Spalding, for services as ap- praiser on D. W. Beals' estate.....	10 00	
J. E. Conant, for services selling build- ings at auction.....	25 00	
	<hr/>	28,334 33
Paid for DAMAGES ON ORDERS FROM THE COMMITTEE ON CLAIMS, &c.:		
To Georgianna Davis (as per Resolution)...	350 00	
Gilbert C. Carr and wife (as per Reso- lution).....	250 00	
Timothy Burns and Mary Burns, for in- juries received.....	100 00	
Daniel Carney, for injuries received....	80 00	
Patrick Courtney, for injuries received..	75 00	
William Cowen and wife, for injuries re- ceived.....	125 00	
Jennie F. Wyman, for injuries received.	50 00	
Catherine Short, for injuries received..	100 00	
Mary Short, for injuries received.....	100 00	
George Bulmar, for injuries received....	75 00	
Ann Sargent, for injuries received.....	75 00	
Isaac Page, for land taken for sidewalk purposes on the northerly side of Broadway (as per Resolution).....	25 00	
	<hr/>	1,405 00
Paid for SUNDRIES:		
To D. W. Clement, for one bay horse.....	250 00	
Nathaniel Brinley, for one pair bay horses.....	550 00	
George S. Butters, for difference in ex- change of horses.....	620 00	
	<hr/>	
<i>Amounts carried forward</i> ,.....	\$1,420 00	\$140,615 80

<i>Amounts brought forward</i> ,.....	\$1,420 00	\$140,615 80
Paid for SUNDRIES:		
To George S. Butters, for use of horse.....	61 50	
George L. Huntoon, for clipping horse, and use of buggy.....	15 00	
J. R. Hayes, for medicine for horses....	41 35	
Robert Wood, for attendance and medi- cal treatment of horses.....	69 50	
Heirs of J. Bennett, for rent of land cor- ner of First and Second streets.....	75 00	
W. E. Livingston, for labor of men....	45 49	
Amos S. Brown, for teaming.....	240 00	
F. H. Penniman, for teaming.....	12 00	
C. B. Coburn & Co., for sperm oil, bas- kets, cod line, twine, paint, brushes, lead, axle grease, varnish, linseed oil, spirits turpentine, manila rope, tallow, brooms, pails, sponge, buck- ets, &c.....	128 45	
W. W. Wilmot, for painting and sand- ing posts and rails.....	3 50	
G. F. Hill, for painting signs.....	1 75	
Fiske & Spalding, for painting and let- tering signs.....	11 25	
Brown & Carter, for paint and labor...	11 84	
C. E. Adams, for hardware.....	111 82	
Fielding & Bartlett, for hardware.....	18 76	
H. B. Shattuck, for hardware.....	22 98	
J. Rogers & Co., for hardware.....	318 40	
H. O. Morse, for horse and carriage, for City Messenger.....	9 00	
Appropriation for Water Works, for shovels.....	43 50	
Appropriation for Water Works, for use of water, and service pipe.....	215 18	
John C. Woodward, for cash paid for lin- iment, salt, ladder, car fares, &c....	17 20	
Buttrick & Co., for sulphur, castile soap, mustard, salts, saltpetre, &c.....	5 21	
Nichols & Fletcher, for fuse, powder, baskets, salt, &c.....	3 70	
R. K. Runals, for liniment and oat meal	25 94	
A. L. Russell, for oat meal.....	90	
Ebenezer Cleaves, for abatement on side- walk assessment.....	2 22	
R. W. Baker, for postage stamps.....	3 00	
<i>Amounts carried forward</i> ,.....	\$2,934 44	\$140,615 80

Amounts brought forward,..... \$2,934 44 \$140,615 80

Paid for SUNDRIES :

To J. W. Bennett, for felt, composition, labor, &c.....	36 04
W. H. Clemence, for service of writ City of Lowell vs. G. W. Page.....	4 25
H. R. Barker & Co., for iron pipe, brackets, valves, packing, labor, &c.	46 98
J. W. Proctor, for hose bibbs and gas cocks.....	6 76
Dudley Hartford, for besom.....	8 00
Belt and Leather Stuffing Company, for harness oil.....	9 50
Josiah Gates & Sons, for scrap leather and belt.....	3 96
H. A. Washburn, for horse brushes.....	18 00
Albert Wheeler, for salt.....	80
J. L. Kelley, for rattan brushes.....	4 00
J. H. Haskell, for filing saws.....	13 70
O. N. Huse, for sawing wood.....	18 00
Isaac Page, for sawing wood.....	41 60
Jeremiah Sullivan, for sawing wood....	28 00
James Maguire, for sawing wood.....	10 80
John McGoveren, for sawing wood.....	46 50
F. P. Coggeshall & Son, for diary.....	85
H. C. Church & Son, for manila paper...	4 48
J. Merrill & Son, for stationery.....	44 89
John Pettingell, for turning and repairing wagon.....	42 65
Hildreth & Rice, for wire cloth and coal screen.....	50 44
Mrs. H. M. Hooke, for cash paid for repairing drain.....	15 00
Middlesex Company, for cinders.....	6 75
G. B. Farnham, for lumber, nails, and labor.....	28 08
J. L. Powers, for boxing trees, white-washing, brushes, &c.....	110 25
Merrill & Calef, for building fence (Bridge street).....	15 75
Richardson & Cutter, for keys.....	50
George Thatcher, for clock, and repairing clock.....	9 00
Luther Kittredge & Son, for gravel....	45 00
George Richardson, for refreshments to men.....	8 50

Amounts carried forward,..... \$3,613 47 \$140,615 80

<i>Amounts brought forward,.....</i>	\$3,613 47	\$140,615 80
Paid for SUNDRIES :		
To A. L. Brooks & Co., for sawdust.....	2 00	
H. H. Wilder & Co., for stove grate, copper bottom boiler, pump box, coal hod, labor, &c.....	12 28	
	<hr/>	3,627 75
To amount of Superintendent of Public Buildings' bill, for the year.....	13 50	
	<hr/>	13 50
*Whole expenditures for the year.....		144,257 05
Balance undrawn, January 1, 1874.....		27,638 49
		<hr/>
		\$171,895 54
		<hr/>
<hr/>		
* From this deduct the amount paid for the extension of Appleton street.....	\$28,334 33	
Deduct amount of Superintendent of Streets' bills, charged to various Appropriations or Accounts.	26,254 66	
	<hr/>	54,588 99
Making the actual expenditures for ordinary purposes for Roads and Bridges.....		<hr/>
		\$89,668 06
		<hr/>

RESERVED FUND.

Balance undrawn, January 1, 1873.....	\$898 33	
	<hr/>	\$898 33

RECEIPTS.

*Received into the Treasury from various sources.....	15,418 44	
	<hr/>	15,418 44
		<hr/>
		\$16,316 77
		<hr/>
		<hr/>

EXPENDITURES.

Paid for LABOR:

To William Allen.....	167 50
John Biggs.....	924 75
A. B. Carle.....	921 75
H. H. Carle.....	217 55
M. B. Caswell.....	289 70
W. H. Devlin.....	615 25
John Donahoe.....	570 50
Andrew Fallon.....	18 96
Joseph Field.....	476 00
L. G. Howe, Jr.....	552 87
Dennis Kohawn.....	538 13
L. P. Little.....	454 00
Job Moody.....	605 97
Patrick Quinn.....	553 00
Daniel Reynolds.....	641 00
	<hr/>
<i>Amount carried forward,.....</i>	\$7,546 93

* See pages 5, 6, 7, 8 and 9.

<i>Amount brought forward</i> ,.....	\$7,546 93	
Paid for LABOR:		
To Addison Spaulding.....	432 00	
Aaron Scadding.....	411 25	
E. L. Jones.....	248 75	
Ellen A. Bridge.....	15 00	
Emery Blodgett.....	40 00	
Eliza Freeman.....	45 00	
S. Augusta Haggett.....	20 00	
Aurelia L. Howe.....	20 00	
Frank Harrison.....	15 00	
George Robbins.....	15 00	
Emily M. Warren.....	25 00	
J. H. Hoyt.....	553 75	
Thomas McNiff.....	171 50	
L. H. Quimby.....	528 00	
Willard Lovejoy.....	4 38	
C. F. Lane.....	501 00	
A. W. Livermore.....	130 00	
Annie S. Harlow.....	5 00	
John McAleer, Engineer (boilers City Government Building).....	841 00	
Warren Fletcher, Janitor Huntington Hall.....	846 00	
	<hr/>	12,414 56
Paid TAXES REFUNDED:		
To Elizabeth B. Bowditch, for amount paid by her under protest on bank shares	51 87	
Thomas F. Burgess, for poll tax of 1873, (abated).....	2 00	
	<hr/>	53 87
WASHINGTON'S BIRTHDAY:		
To Lowell City Guards, firing National Sal- ute (at noon).....	50 00	
W. H. Jones, for ringing bell Varnum School-House	50	
	<hr/>	50 50
MEMORIAL DAY, POST 42, GRAND ARMY OF THE REPUBLIC:		
To T. C. Webber (per Resolution).....	500 00	
	<hr/>	500 00
<i>Amount carried forward</i> ,.....		\$13,018 93

Amount brought forward,..... \$13,018 93

FOURTH OF JULY—PAID FOR SALUTES, &c., THE NINETY-SEVENTH ANNIVERSARY OF AMERICAN INDEPENDENCE:

To Lowell City Guards, for firing National Salute, sunrise and sunset.....	100 00
Company C, Sixth Regiment Mass. Vols., for services.....	42 00
Company D, Sixth Regiment Mass. Vols., for services.....	49 00
Company G, Sixth Regiment Mass. Vols., for services.....	43 00
Company H, Sixth Regiment Mass. Vols., for services.....	34 00
Spaulding Light Cavalry, for services...	50 00
Spaulding Light Cavalry, for oats for horses.....	4 64
Ocean Hose Company, No. 1, for services.....	12 00
Mechanics Hose Company, No. 2, for services.....	12 00
Excelsior Hose Company, No. 3, for services.....	12 00
Mazeppa Hose Company, No. 4, for services.....	12 00
Hope Steamer Company, No. 1, for services.....	13 00
Torrent Steamer Company, No. 2, for services.....	13 00
Wamesit Steamer Company, No. 3, for services.....	13 00
Franklin H. and L. Company, for services.....	29 00
Board of Engineers (Fire Department) for services.....	6 00
C. H. Hanson, for services as driver, Hose No. 1.....	5 00
C. H. Fletcher, for services as driver, Hose No. 2.....	10 00
G. W. Norris, for services as driver, Hose No. 3.....	10 00
D. G. Leavitt, for services as driver, Hose No. 4.....	10 00
G. S. Butters, for services as driver, Steamer No. 1.....	15 00

Amounts carried forward,..... \$494 64 \$13,018 93

<i>Amounts brought forward,.....</i>	\$494 64	\$13,018 93
FOURTH OF JULY—PAID FOR SALUTES, &c., THE NINETY SEVENTH ANNIVERSARY OF AMERICAN INDEPENDENCE:		
To E. A. Hills, for services as driver, Steamer No. 2.....	5 00	
S. A. King, balloonist.....	670 00	
Lowell Gas Light Co., for 132,000 cubic feet of gas, at .0025 per foot, to inflate balloon,.....	330 00	
J. L. Sargent, for cash paid for saddles, sashes, batons, &c.....	141 35	
Leominster Brass Band, for services....	200 00	
American Brass Band, for services.....	195 00	
Nashua Cornet Band, for services.....	175 00	
Lowell Cornet Band, for services,.....	160 00	
Dunstable Cornet Band, for services....	144 00	
French Band, for services.....	160 00	
Lowell Drum Corps, for services.....	60 00	
B. M. Wedger, for exhibition of fireworks.	500 00	
John G. Hubbard, for entertainments in Huntington Hall, for children.....	75 00	
Robert Wood, for horse trotting at Fair Grounds.....	300 00	
Benjamin Thurston, for entertaining Leominster Band.....	15 00	
William Welch, for services as caterer..	125 00	
North End Boat Club, for second prize in four-oared shell race.....	125 00	
Charles McCarty, for first prize in four-oared race.....	250 00	
Evans Morris, for first prize for single scull wherries.....	100 00	
J. Landers, for 2d prize for single sculls	50 00	
M. J. Ahearn, for first prize in working boats.....	25 00	
Charles Lambert, for second prize in local race, single sculls.....	25 00	
Lawrence Roarke, for first prize in local race.....	50 00	
T. F. Butler, for second prize in working boats.....	15 00	
John Lennon, for expenses attending regatta.....	60 00	
<i>Amounts carried forward,.....</i>	\$4,449 99	\$13,018 93

<i>Amounts brought forward,.....</i>	\$4,449 99	\$13,018 93
FOURTH OF JULY—PAID FOR SALUTES, &c., THE NINETY-SEVENTH ANNIVERSARY OF AMERICAN INDEPENDENCE:		
Thomas Flynn, for services in clearing river from logs, &c.....	48 00	
Thomas Mahoney, for removing logs from river.....	6 00	
David McCarthy, for use of land for regatta.....	5 00	
William Dobbins, for cash paid for tub race and expense attending regatta.	20 00	
Charles E. Dow, for lowering canal boat in river, for regatta.....	20 00	
E. B. Pierce, for use of boat and oars lost at regatta.....	14 00	
A. L. Wright, for use of steamboat at regatta.....	25 00	
A. D. Wright, for use of boats, and services at regatta.....	19 00	
S. T. Moses, for moving settees at regatta	8 00	
G. W. Pearson, for lumber, nails and labor for regatta.....	48 69	
D. G. Leavitt, for horses and carriage..	40 00	
G. L. Huntoon, for use of carriage.....	12 00	
Samuel Convers, for fitting extension on wagon, for eagle, &c.....	7 00	
H. W. Brickett, for telegrams in regard to regatta.....	2 50	
L. G. Howe, Jr., for labor on bandstands, raising flags, &c.....	5 06	
C. F. Lane, for labor on bandstands, raising flags, &c.....	7 50	
John Biggs, for raising flags, labor on balloon and fireworks.....	6 75	
A. B. Carle, for labor on bandstands, raising flags, fireworks, &c.....	7 50	
Patrick Quinn, for labor on bandstands, and balloon.....	1 75	
Timothy Kelley, for trucking.....	2 00	
John Donohoe, for labor on fireworks, raising flags, balloon, &c.....	1 75	
William Roberts, for trucking.....	9 00	
John C. Woodward, for use of teams, labor of men, &c.....	51 50	
<i>Amounts carried forward,.....</i>	\$4,817 99	\$13,018 93

<i>Amounts brought forward,.....</i>	\$4,817 99	\$13,018 93
FOURTH OF JULY—PAID FOR SALUTES, &c., THE NINETY-SEVENTH ANNIVERSARY OF AMERICAN INDEPENDENCE:		
Stone & Huse, for printing and advertising.....	21 00	
Knapp & Morey, for printing and advertising.....	41 75	
Marden & Rowell, for printing and advertising.....	32 44	
E. A. Hills, for printing and advertising.....	31 00	
W. S. Simons, for posting mammoth sheets in Lowell, Lawrence, Salem, Nashua, Manchester, Concord, Framingham and Ayer.....	28 00	
A. L. Brooks & Co., for lumber.....	3 68	
Edwin Sanborn, for fitting hose carriage.....	5 65	
L. C. Dodge, for use of tent for fireworks.....	3 00	
A. L. Ready, for use of tent for fireworks.....	3 00	
W. F. Eno, for furnishing material and decorating "Union" carriage, furnishing thirty-seven coronets, and decorating front of City Government Building.....	44 50	
A. B. Farr, for cash paid Spaulding Light Cavalry, and telegraphing to balloonist.....	8 93	
W. H. Jones, for ringing bell, Varnum School-house.....	2 50	
Charles Barrows, for ringing bell Franklin School-House.....	2 50	
W. L. Clark, for ringing bell High Street Church.....	2 50	
Alphonzo Merrill, for teaming bandstands.....	2 50	
Francis Jewett, for telegram relating to balloon ascension.....	1 49	
Dennis Kohawn, for labor on bandstands, balloon, &c.....	4 38	
		5,056 81
<i>Amount carried forward,.....</i>		\$18,075 74

Amount brought forward,..... \$18,075 74

Paid for RECEPTION OF UNITED
TRAIN OF ARTILLERY of PROV-
IDENCE, R. I.:

To C. H. Kimball, for furnishing collation, carriages, and entertaining guests.	256 50	
B. F. Goddard & Son, for entertaining guests.....	91 00	
George L. Huntoon, for barouches and horses.....	109 00	
Michael Brady, for teaming bandstand to Park Garden.....	4 00	
	<hr/>	460 50

Paid MEASURER OF WOOD AND
BARK, AND SUPERINTENDENT
OF CITY SCALES:

To Sydney Davis, Measurer (salary).....	800 00	
Sydney Davis, Superintendent (salary)..<	200 00	
	<hr/>	1,000 00

Paid MILITIA MILEAGE:

To Company "C".....	\$49 20	
Company "D".....	48 00	
Company "G".....	34 80	
Company "H".....	49 20	
	<hr/>	181 20

To sundry persons, May Inspection, 1873:

Company "C".....	\$81 50	
Company "D".....	99 50	
Company "G".....	73 00	
Company "H".....	81 00	
	<hr/>	335 00

Paid WARD OFFICERS:

To S. D. Gordon, for services as Warden, Ward 1, December 9.....	5 00	
R. L. Read, for services as Clerk, Ward 2, December 9.....	5 00	
Edwin Lamson, for services as Warden, Ward 2, December 9.....	5 00	
E. E. Reed, for services as Inspector, Ward, 2, December 9.....	3 00	
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Amounts carried forward,..... \$18 00 \$20,052 44

<i>Amounts brought forward,.....</i>	\$18 00	\$20,052 44
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Paid WARD OFFICERS:

To J. S. D'Evelyn, for services as Inspector, Ward 2, December 9.....	3 00	
G. M. Elliott, for services as Inspector, Ward 2, December 9.....	3 00	
A. C. Russell, for services as Inspector, Ward 4, December 9.....	3 00	
J. A. Manuel, for services as Warden, Ward 5, December 9.....	5 00	
T. A. McMaster, for services as Clerk, Ward 5, December 9.....	5 00	
M. G. Perkins, for services as Inspector, Ward 5, December 9.....	3 00	
Lewis Stiles, for services as Inspector, Ward 5, December 9.....	3 00	
A. M. Huntoon, for services as Inspector, Ward 5, December 9.....	3 00	
	<hr/>	46 00

Paid for SUNDRIES:

To Boston and Lowell and Nashua and Low- ell Railroad Co., for rent of land on Merrimack and Dutton streets, oc- cupied by Huntington and Jackson Halls, as per lease, from January 1, 1873, to January 1, 1874.....	450 00	
F. H. Harris, for use of Russian Hall, for Democratic Caucus.....	15 00	
Proprietors of Urban Block, for use of Banquet and Russian Halls, for Dem- ocratic Caucus.....	25 00	
James M. Howe, for ascertaining the number of births in 1872.....	40 40	
Joseph D. Pinder, for ascertaining the number of births in 1872.....	38 60	
Charles C. Langley, for ascertaining the number of births in 1872.....	29 70	
Joshua Merrill & Son, for stationery....	3 12	
H. C. Church & Son, for stationery.....	86 25	
F. P. Coggeshall & Son, for stationery, General Statutes, and supplements..	122 10	
Abel Whitney, for ink.....	2 00	
Caleb Carver, for pens.....	1 50	
Daniel Gage, for ice, 1873.....	19 50	
	<hr/>	
<i>Amounts carried forward,.....</i>	\$833 17	\$20,098 44

<i>Amounts brought forward,.....</i>	\$833 17	\$20,098 44
Paid for SUNDRIES :		
To Frederick Small, for handstamps and repairing same.....	50 00	
Appropriation for Roads and Bridges, for wood, coal, teaming, labor on Burying Grounds, &c.....	3,542 99	
Appropriation for Schools, for brooms...	1 50	
Appropriation for Water Works, for use of water for sprinkling streets, &c...	630 50	
W. S. Simons, for posting checklists, &c.	25 75	
John H. Nichols, for cash paid for postage stamps, rent of box in Post Office, washing towels, labor cleaning Government Building, matches, soap, cleaningspittoons, mats, lamp-globes, &c.....	70 01	
H. O. Morse, for carriage hire (City Messenger)	15 00	
C. H. Fletcher, for coaches at funeral of Alderman Dobbins.....	132 40	
G. L. Huntoon, for horse and sleigh to convey Railroad Committee.....	5 00	
George W. Norris, for coaches and horses to convey Hospital Commissioners, relating to locating Insane Hospital.....	20 00	
Emery & Nute, for entertainment of Commissioners to locate a new Insane Hospital.....	7 00	
E. W. Fiske, for service of notice on Selectmen of Dracut relating to annexation	5 00	
G. L. Huntoon, for coaches and horses for Committee, relating to annexation of Dracut.....	24 00	
Samuel Convers, for repairing hearse....	5 79	
Ross & Jewett, for repairing hearse....	6 00	
J. B. Currier, for cash paid out for repairing hearse.....	2 00	
G. F. Hill, for repairing hearse.....	1 00	
S. G. Mack & Co., for inkstand holders.	97	
L. Kittredge & Son, for material and labor at old Burying Ground, corner of Middlesex and School streets,.....	215 68	
<i>Amounts carried forward,.....</i>	\$5,593 76	\$20,098 44

<i>Amounts brought forward,.....</i>	\$5,593 76	\$20,098 44
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Paid for SUNDRIES:

To John H. McAlvin, for cash paid City Treasurer and Collector, for estates purchased by him in behalf of the City of Lowell, for non-payment of Sewer Assessments on the East and West sides of South street.....	359 45
O. N. Huse, for labor removing stumps from Burying Ground.....	188 87
Frank Mead, for removing stumps from Burying Ground.....	65 00
John Higgins, for labor in Burying Ground.....	56 00
George Offutt & Son, for cushions.....	10 00
Warren Fletcher, for sawdust.....	2 00
S. M. Patterson, for services at City Hay Scales.....	48 00
Carleton & Hovey, for chamois skin, chloride of zinc, castile soap, hair brushes, and combs.....	5 95
C. E. Adams, for hatchet.....	95
A. D. Puffer, for services as Inspector, Ward 4, December 9.....	3 00
H. & A. Whitney, for lumber for Burying Ground.....	38 49
C. B. Coburn & Co., for hemp rope and feather duster.....	20 37
French & Puffer, for spittoons, pitcher and tumblers.....	4 25
H. H. Wilder & Co., for tin file boxes, tin pan, &c.....	45 86
Marin & Jewett, for towels.....	3 00
Wm. Roberts, for teaming sawdust.....	75
Bradford Marvel, for expenses to Boston to settle Bank Tax with Tax Commissioner, and services.....	58 00
Francis Jewett, for cash paid for railroad tickets for Committee to railroad hearing, telegrams, &c.....	43 29
John H. McAlvin, for cash paid for postage stamps, express charges, Bank Note Reporter, &c.....	124 40
S. A. McPhetres, for cash paid for expressage, postage stamps, pens, &c..	25 06

<i>Amounts carried forward,.....</i>	\$6,696 45	\$20,098 44
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<i>Amounts brought forward</i> ,.....	\$6,696 45	\$20,098 44
Paid for SUNDRIES :		
To H. R. Barker & Co., for lamp shades, gas fixtures, &c.....	11 16	
Boston and Lowell and Nashua and Low- ell Railroad Co's Express Parcel De- partment, for packages.....	70	
	<hr/>	6,708 31
		<hr/>
		26,806 75
Deduct amount of Superintendent of Public Buildings' bills, charged to the fol- lowing appropriations, viz :		
For Schools.....	6,756 94	
School-houses.....	2,131 48	
Roads and Bridges.....	13 50	
Paupers	99 56	
Police.....	178 09	
Fire Department.....	211 69	
Sewers and Drains.....	8 25	
Commons.....	73 29	
Repairs of Public Buildings.....	887 71	
Water Works.....	197 40	
Health Account.....	150 63	
	<hr/>	10,708 54
		<hr/>
Making the actual expenditure for the year 1873		16,098 21
Balance undrawn, January 1, 1874.....		218 56
		<hr/>
		<u>\$16,316 77</u>

PAUPERS.

Balance undrawn January 1, 1873.....	\$5,083 52	
Appropriated and assessed in 1873.....	16,000 00	
	<u> </u>	\$21,083 52

RECEIPTS.

*Received into the Treasury from various sources.....	6,721 72	
	<u> </u>	6,721 72
		<u>\$27,805 24</u>

EXPENDITURES.

To Lorenzo Phelps, Superintendent of the Almshouse and Farm.....	1,500 00	
William A. Lang, Chaplain and Teacher of Reform School.....	1,000 00	
A. M. Gray, Clerk, &c.....	675 00	
Henry S. Phillips, for labor.....	360 00	
Nicholas Pierce, for labor.....	390 00	
Maria Mooney, for labor.....	260 00	
Charlotte Kitchen, for labor.....	156 00	
	<u> </u>	4,341 00
Paid for GROCERIES, GRAIN, MEAT, &c., used at the ALMSHOUSE :		
To S. N. Wood & Son, for grain, feed, &c..	367 68	
Stiles, Rogers & Co., for flour, grain, &c.	224 21	
	<u> </u>	
<i>Amounts carried forward,.....</i>	\$591 89	\$4,341 00

* See pages 10, 11 and 12.

<i>Amounts brought forward</i> ,.....	\$591 89	\$4,341 00
Paid for GROCERIES, GRAIN, MEAT, &c., used at the ALMSHOUSE :		
To W. E. Livingston, for meal and feed...	236 39	
Page, Kidder & Co., for flour.....	655 25	
Rogers & Lord, for meal and feed.....	125 18	
To A. L. Waite & Co., Agts., for flour..	687 50	
George W. Norris, for feed, grass seed, &c.	169 99	
Litchfield & Co., for beans.....	56 18	
H. A. & S. A. Coburn, for oats.....	17 60	
Martin Morris, for flour and baking...	391 23	
Union Oil Co., for soap.....	36 85	
Boston and Lowell and Nashua and Low- ell Railroad Corporation, for freight on soap.....	2 18	
Samuel Horn & Co., for scraps.....	56 14	
Morse & Turner, for powder.....	6 00	
J. & J. M. Pearson, for crate of boxes..	6 00	
Dana Brothers, for five hhds. molasses..	249 20	
Boston and Lowell and Nashua and Low- ell Railroad Corporation, for freight on molasses.....	8 49	
Samuel G. Davis & Co., for fish.....	179 14	
Boston and Lowell and Nashua and Low- ell Railroad Corporation, for freight on fish	4 40	
Walter Parkhurst, for fish.....	22 00	
Daniel Gage, for ice.....	17 63	
E. W. Hall, for lemons and fireworks..	33 55	
J. L. Sargent, for provisions.....	194 57	
Richardson Brothers, for provisions....	120 15	
E. C. Rice, for provisions.....	163 42	
L. J. Shedd, for beef.....	46 80	
Michael Corbett, for beef.....	28 90	
Daniel S. Gray, for provisions.....	300 88	
S. P. Perham, for making cider.....	6 81	
Nichols & Fletcher, for groceries.....	179 63	
Buttrick & Co., for groceries.....	35 62	
Albert Wheeler, for groceries.....	139 49	
A. D. Puffer & Co., for groceries.....	54 14	
Coburn & Smith, for groceries.....	95 23	
Calderwood & Garven, for potatoes.....	6 30	
William Calderwood, for tobacco.....	100 79	
		5,025 52
<i>Amount carried forward</i> ,.....		\$9,366 52

Amount brought forward,..... \$9,366 52

Paid for NURSING and BOARDING
PERSONS OUT OF THE ALMS-
HOUSE:

To State Lunatic Hospital, (Worcester) for support of Caroline W. Prescott, Joseph Carpenter, Laurena Boorn, Louisa Parker, Josephine B. McCarty, Roxanna Robinson, Angie A. Brown, Mary Casey, Nathan C. Morse, Ruel A. Brown, Alice Smith, Edward Cull, John A. Bennett, Ellen Golding, Henry W. Sargent, Jr., Michael Welch, Benjamin F. Pierce, Nancy Peabody, Mary Ann Ray, Elizabeth Gibbens, and Edward Kneeland.....	2,784 36	
State Lunatic Hospital, (Taunton) for support of Charles R. Watts, Michael Sullivan, Enoch L. Lewis, James Low, Michael F. O'Brien, and John Gannon.....	1,421 57	
Commonwealth of Massachusetts, for support of Edward Kneeland at Lunatic Hospital, (Worcester).....	27 00	
State Industrial School for Girls, (Lancaster (for support of Delia Conley, Zilpha F. V. Taylor, Ellen Roark, Elizabeth Shute, Catherine Myrtle, and Ella Bailey.....	58 00	
St. John's Hospital, for medicine and medical attendance of Mary McNulty, and Burnham Trafton, and board of Hannah Garvin.....	78 42	
Town of Melrose, for supplies and attendance furnished D. F. Aiken and family.....	77 65	
State Reform School (Westborough, for boys) for keeping John Devine, James Kennedy, Charles Lovett and Jeremiah Johnson.....	40 36	
C. J. Adams, for support of prisoners in the House of Correction (Middlesex County).....	279 28	
Essex County, for board of prisoners at the House of Correction.....	54 67	
<i>Amounts carried forward</i> ,.....	\$4,821 31	\$9,366 52

<i>Amounts brought forward,.....</i>	\$4,821 31	\$9,366 52
Paid for NURSING and BOARDING PERSONS OUT OF THE ALMS- HOUSE:		
To City of Boston, for support of John Cal- lahan, Robert Gannon, Michael T. McNamara, Sarah Shehan, Hannah K. Stevens, George Taylor, George B. Wood, Thomas Mooney, Joanna Stevens, Bridget O'Brien and Bene- dict Dougherty.....	223 73	
City of Charlestown, for relief of George H. Shepard, Eliza O'Brien, Bridget Gallagher and James L. Hanson...	233 65	
City of Lawrence, for aid rendered Rose Callahan and family. Charles W. Keeser, John McManus, John W. McDonald, John W. Sheldon, John J. Quinlan and Thomas Allen and wife.....	190 03	
City of Lynn, for aid rendered Nelly C. Moore.	96 00	
City of Salem, for aid rendered and med- ical attendance of Mrs. George W. Nimblet and Abbie Barrett.....	81 65	
City of Taunton, for aid rendered Mary Oaks, and burial of Mary A. Sands,	41 00	
City of Worcester, for medical attend- ance and board of Emmet Nawn....	95 00	
City of Fitchburg, for support of Patrick McDonald's wife.....	10 00	
Town of Fitchburg, for aid rendered Mrs. Patrick McDonald.....	5 00	
James Glazier, for nursing Mary Dris- coll.....	4 00	
Town of Chelmsford, for aid rendered family of George W. Campbell.....	78 00	
Margaret Quinn, for assistance in cash..	60 00	
Charles Knapp, for monthly assistance in cash.....	144 00	
Samuel A. Clark, for medical attendance and nursing of Nancy J. Smith....	45 00	
B. Rorf, for board of Helene Toupon....	4 00	
Honora Ryan, for nursing Ellen Welch,	16 00	
Angie B. Stockwell, for nursing Jennie Wright	28 98	
<i>Amounts carried forward,.....</i>	\$6,177 35	\$9,366 52

<i>Amounts brought forward,.....</i>	\$6,177 35	\$9,366 52
Paid for NURSING and BOARDING PERSONS OUT OF THE ALMS- HOUSE:		
To Margaret Hennesey, for nursing Mar- garet Joyce.....	20 00	
Bridget Farrell, for nursing Mrs. John Kennedy.....	6 50	
Mary Carey, for boarding John Hanne- burn.....	3 00	
Bridget Carney, for board and nursing of Mrs. John Ford.....	7 00	
Mrs. Edward Cushing, for board and nursing of Charles Matcher.....	10 00	
Nathaniel Howard, for attending funeral of Daniel F. Aiken's child.....	15 00	
Mrs. Thomas J. Giles, for board of Jen- nie Wright.....	10 50	
John B. Chace, for medical attendance upon Mary A Sands.....	12 00	
Walter H. Leighton, for medicine and medical attendance of Mrs. Mary Cooley.....	64 00	
Burnham & Davis, for medical attend- ance of Mary Driscoll.....	5 00	
Hermion J. Smith, for professional ser- vices.....	117 80	
	<hr/>	6,448 15
Paid for CLOTHING, DRY GOODS, BOOTS, SHOES, LEATHER, &c.:		
To Putnam & Son, for caps and shirts....	45 00	
William P. Brazer & Co., for hats and mittens.....	25 50	
Mary C. Tuite, for clothing.....	12 50	
H. Hosford & Co., for dry goods.....	82 60	
Folsom & Tucker, for dry goods.....	38 94	
Marin & Jewett, for dry goods.....	138 16	
James McGill, for dry goods.....	2 88	
George W. Norris, for blankets.....	4 00	
D. L. Dimock, for leather and findings..	65 85	
Josiah Gates & Sons, for oil.....	2 00	
H. Wright & Co., for boots and shoes...	160 75	
N. M. Wright, for boots.....	2 50	
H. R. Flanders, for crimping boots.....	1 25	
	<hr/>	581 93
<i>Amount carried forward,.....</i>		\$16,396 60

Amount brought forward,..... \$16,396 60

Paid for COFFINS, INTERMENTS, &c.:

To Terence Hanover.....	178 00	
J. W. Brooks.....	42 00	
J. B. Currier.....	22 00	
C. T. Chamberlin.....	6 00	
	<hr/>	248 00

Paid for SUNDRIES:

To Joseph H. Smith, for examinations and certificates in insane cases.....	38 00	
F. C. Plunkett, for examinations and certificates in insane cases.....	16 00	
J. H. Gilman, for examination and certificate in insane case.....	2 00	
John H. Nichols, for cash paid out for railroad fares, tickets, &c.....	43 98	
C. B. Coburn & Co., for white lead, oil, potash, hemp cord, brushes, twine, spirits turpentine, packing, glue, paint, sand paper, varnish, &c.....	250 45	
Jacob Rogers & Co., for hardware.....	36 08	
Fielding & Bartlett, for hardware, &c...	88 00	
H. B. Shattuck, for hardware.....	15 08	
American Consolidated Fire Extinguish-er Co., for copper fire extinguishers.	229 00	
Howes & Burnham, for lumber.....	117 96	
A. L. Brooks & Co., for lumber.....	42 70	
H. & A. Whitney, for lumber.....	211 43	
M. C. Pratt & Co., for window frames, and doors.....	14 80	
A. Bachelder & Co., for ash doors.....	25 00	
Jonathan Kendall, for Salem lead and stain.....	2 04	
Fiske & Spalding, for paper hangings...	2 24	
A. P. Quimby, for paint and painting..	303 98	
George W. Pearson, for lumber and la-bor.....	646 55	
N. T. Staples & Sons, for drain pipe...	176 48	
E. A. & A. T. Smith, for concrete.....	211 73	
W. E. Livingston, for lime, cement, brick, hair, and coal.....	105 97	
Bennett & Moulton, for mason work....	76 75	
T. D. Bailey, for chimney cap.....	12 50	
T. A. Sanborn, for mason work.....	102 00	
	<hr/>	
<i>Amounts carried forward</i> ,.....	\$2,770 72	\$16,644 60

<i>Amounts brought forward,.....</i>	\$2,770 72	\$16,644 60
Paid for SUNDRIES:		
To H. O. Morse, for coaches, horses, &c....	11 50	
Offutt & Whitaker, for cane.....	4 80	
E. B. Patch & Co., for children's cabi- nets, &c.....	6 50	
Carleton & Hovey, for castor oil, sherry wine, camphor, corks, &c.....	17 83	
C. R. Kimball, for ammonia, tincture of arnica, rhubarb, extract of ginger, carbolic acid, &c.....	18 43	
S. P. Pierce, for repairing copper boiler,	22 00	
Cole & Nichols, for castings.....	17 90	
John Butcher, for iron and steel.....	32 41	
T. Costello & Co., for zinc, stove pipe, solder, repairing stoves, &c.....	28 51	
H. H. Wilder & Co., for English pipe, ash pit doors, coal hods, milk cans, &c.....	25 25	
N. J. Wier & Co., for repairing stove grates, &c.....	11 56	
S. G. Mack & Co., for cauldrons, Russia covers, door frames, iron pipe, &c....	56 90	
John S. Shed, for plough points and saw- ing lumber.....	5 29	
E. H. Marshall, for shoeing oxen, &c....	6 60	
Charles Sweetser, for plank.....	7 00	
Ross & Jewett, for whip socket.....	1 00	
Samuel Convers, for repairing carriages, &c.....	52 33	
J. A. Brabrook, for harnesses and repair- ing harnesses.....	36 05	
John G. Allen, for silver plated harness,	55 00	
M. V. B. Libbey, for shoeing horses....	57 80	
Town of Chelmsford, for taxes for 1873,	56 82	
Lorenzo Phelps, for cash paid for labor, expenses to Boston, Worcester, &c..	36 94	
E. P. Spalding, for heifers and calf.....	132 00	
H. R. Barker & Co., for copper pump, pipe, labor, &c.....	16 59	
H. A. & S. A. Coburn, for cow.....	55 00	
A. M. Gray, for cash paid on account of paupers.....	15 90	
Appropriation for Roads and Bridges, for coal, wood, blacksmithing, car- penter work, manure, &c.....	2,068 60	
<i>Amounts carried forward,.....</i>	\$5,627 23	\$16,644 60

<i>Amounts brought forward,.....</i>	\$5,627 23	\$16,644 60
Paid for SUNDRIES :		
To Appropriation for Fire Department, for use of steamer, wool waste and packing plungers.....	42 00	
S. Simons, for wood.....	342 15	
Otis Adams, Jr., for damage to fence...	5 00	
Adams Chamberlin, for one mowing ma- chine	90 00	
Addison Varney, for labor.....	16 25	
John Wright, for labor.....	30 00	
H. Harper, for labor.....	18 00	
Charles T. Haskell, for labor.....	36 00	
John C. Bennett, for wire line.....	5 00	
J. H. Haskell, for stencil plate, brush, paste, filing saws, &c.....	5 95	
Charles Proctor, for iron tire, and re- pairing wheels.....	28 00	
French & Puffer, for crockery, glass- ware, &c.....	9 50	
Joshua Merrill & Son, for stationery...	6 15	
F. P. Coggeshall & Son, for books and stationery	21 00	
Henry C. Church, for straw paper.....	2 21	
Samuel M. Chase, for services apprais- ing property at Almshouse and Farm, and recording personal property, 1873	15 00	
Alpha B. Farr, for services appraising property at Almshouse and Farm, 1873	10 00	
Nathaniel P. Favor, for services apprais- ing property at Almshouse and Farm, 1873	10 00	
George W. Norris, for coach and horses.	6 00	
	<hr/>	6,325 44
To amount of Superintendent of Public Buildings' bills for the year.....	99 56	
	<hr/>	99 56
Whole expenditure for the year.....		23,069 60
Balance undrawn January 1, 1874.....		4,735 64
		<hr/>
		\$27,805 24
		<hr/>

P O L I C E .

Balance undrawn January 1, 1873.....	\$217 36	
Appropriated and assessed in 1873.....	40,000 00	
	<hr/>	\$40,217 36

R E C E I P T S .

*Received into the Treasury from various sources.....	12,385 00	
	<hr/>	12,385 00
		<hr/> \$52,602 36 <hr/>

E X P E N D I T U R E S .

Paid Charles P. Bowles, City Marshal (sal- ary)	1,800 00	
	<hr/>	1,800 00
Paid for SERVICES OF POLICE OF- FICERS:		
To Bickford Lang (Deputy Marshal).....	753 00	
Jacob G. Favor (Deputy Marshal).....	333 00	
Levi Brown (Captain of the Night Po- lice).....	195 00	
Theophilus C. Blaisdell (Captain of the Night Police).....	792 00	
Jacob G. Favor.....	627 50	
Levi Brown.....	657 50	
	<hr/>	
<i>Amounts carried forward,</i>	\$3,358 00	\$1,800 00

* See pages 12 and 13.

Amounts brought forward,..... \$3,358 00 \$1,800 00

Paid for SERVICES OF POLICE OFFICERS:

To Theophilus C. Blaisdell.....	252 75
Squire L. Bailey.....	916 25
Allen P. Bickford.....	903 75
Otis Bullard..	877 50
Andrew Blood.....	640 00
William L. Clarke.....	838 75
Alfred Day.....	905 00
John Dougherty.....	897 50
Asa F. Esty.....	888 75
William P. Farrington.....	867 50
Harrison H. Fuller.....	905 00
Augustus B. Foss.....	915 00
David H. Goodhue.....	911 25
Thomas Ingalls.....	882 50
Patrick Kelley.....	911 25
William M. Lee.....	897 50
Isaac L. Libby.....	892 50
Albert E. Libby.....	917 50
Frank N. Miles.....	843 75
John A. Meloy.....	888 75
Benjamin G. Mooney.....	905 00
Henry Marshall.....	905 00
Mason W. Presby.....	910 00
Alonzo Page.....	905 00
James W. Sheffield.....	145 00
Daniel H. Sinclair.....	917 50
George W. Sanborn.....	706 25
Thomas J. Sanborn.....	746 25
Frank T. Thissell.....	872 50
John W. Tilton.....	925 00
James E. Webster.....	886 25
Levi H. Witham.....	875 00
Stephen L. Young.....	896 25
Charles Howard.....	753 75
Thomas Walsh.....	750 00
John Buchanan.....	562 50
Charles F. Cooper.....	300 00
Frank Goodwin.....	597 50
Henry Garrison.....	422 50
Charles C. Langley.....	487 50
Henry Farrington.....	187 50
Luke Veo.....	281 25

35,248 25

Amount carried forward,..... \$37,048 25

Amount brought forward,..... \$37,048 25

Paid POLICE JUSTICE:

To Nathan Crosby, for services as Police Justice in truant cases.....	100 00	
	<hr/>	100 00

Paid for TRUANT COMMISSIONER:

To Jesse Huse, for services.....	627 50	
	<hr/>	627 50

Paid for SPECIAL POLICE:

To William H. Adams.....	133 75	
Stephen Bartlett.....	121 25	
John Buchanan.....	302 50	
Charles F. Cooper.....	313 75	
Theo. Des Rochers.....	20 00	
Moses Davenport.....	110 00	
Henry Farrington.....	368 75	
Dixon Greenough.....	212 50	
Charles Howard.....	177 50	
William M. Locke.....	82 50	
Charles C. Langley.....	291 25	
Albert D. Porter.....	25 00	
Levi Palmer.....	97 50	
Jacob R. Smith.....	128 75	
Byron C. Sanborn.....	20 00	
Gilbert Trueworthy.....	91 25	
Henry M. Thompson.....	158 75	
Thomas Walsh.....	66 25	
Frank Goodwin.....	102 50	
Henry Garrison.....	192 50	
Luke Veo.....	341 25	
Hermion N. Tilton.....	151 25	
Jerome B. Gilbert.....	22 50	
	<hr/>	3,531 25

Paid for SPECIAL POLICE FOR
FOURTH OF JULY, 1873:

To Maurice Baker.....	6 25
Francis Beharrell.....	6 25
Henry C. Brooks.....	6 25
Allen Buchanan.....	6 25
George E. Blakeslee.....	6 25
Thomas W. Beharrell.....	6 25

<i>Amounts carried forward</i> ,.....	\$37 50	\$41,307 00
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<i>Amounts brought forward,.....</i>	\$37 50	\$41,307 00
Paid for SPECIAL POLICE FOR FOURTH OF JULY, 1873:		
To C. M. Beals.....	3 75	
Vital L. Casanbon.....	6 25	
Thomas H. Clough.....	2 50	
Charles L. Davenport.....	6 25	
Harry C. Daggett.....	6 25	
John Doherty.....	6 25	
Dominick Dagnan.....	6 25	
Stanislas Duff.....	3 75	
James Finnigan.....	6 25	
Jerome B. Gilbert.....	6 25	
Charles Hughes.....	6 25	
Frederick A. Hanson.....	6 25	
Elbridge G. Hilton.....	6 25	
James Hayes.....	6 25	
Patrick Humphrey.....	3 75	
Wm. M. Jones.....	6 25	
Terence Kelley.....	6 25	
Edward Lindsey.....	6 25	
Winslow Lewis.....	5 00	
William J. Lewis.....	3 75	
Henry G. Mitchell.....	6 25	
Timothy Mahoney.....	6 25	
G. P. Morton.....	6 25	
Albert D. Porter.....	6 25	
Stephen S. Phillips.....	3 75	
William Robbins.....	3 75	
James Stackpole.....	6 25	
Heman Stacy.....	6 25	
Frank L. Sawyer.....	3 75	
Gilbert Trueworthy.....	6 25	
Alvin Thompson.....	6 25	
Daniel G. Tapley.....	6 25	
William Turner.....	6 25	
William Taplin.....	6 25	
Alden A. Usher.....	6 25	
Daniel W. Mosher.....	6 25	
Joseph R. Welch.....	6 25	
James Walton.....	12 50	
Michael Walsh.....	6 25	
E. M. Grant.....	3 75	
John Wentworth.....	3 75	
Gilman Holmes.....	3 75	
Stephen Beharrell.....	6 25	
<i>Amounts carried forward,.....</i>	\$282 50	\$41,307 00

<i>Amounts brought forward,.....</i>	\$282 50	\$41,307 00
Paid for SPECIAL POLICE FOR FOURTH OF JULY, 1873:		
To Augustus Dana.....	6 25	
Frank C. Hempfield.....	6 25	
George W. Rines.....	6 25	
George W. Tilton.....	6 25	
Daniel G. Taylor.....	6 25	
William H. Devlin.....	6 25	
	<hr/>	320 00
Paid for SUNDRIES:		
To C. B. Coburn, for rent of Police Court Rooms to January 1, 1874.....	650 00	
Benjamin G. Mooney, for conveyance of persons to Lunatic Hospital, Worces- ter, traveling expenses, &c.....	210 15	
Jacob G. Favor, for conveyance of prison- ers to House of Correction, carriage hire, traveling expenses, &c.....	127 35	
Harrison H. Fuller, for conveyance of prisoners to House of Correction, Jail, &c.....	181 19	
Alfred Day, for railroad fares, carriage hire, &c.....	26 33	
Bickford Lang, for cash paid for convey- ance of prisoners, expressage, tele- grams, &c.....	32 01	
Charles P. Bowles, for cash paid ex- pressage and expenses to Fall Riv- er, Andover, Methuen, &c.....	17 50	
Henry Marshall, for cash paid for rail- road fares in search of criminals, &c.	45 70	
P. M. Jefferson, for soap.....	45 50	
Otis Bullard, for cash paid for washing Police Station, feeding destitute per- sons and repairing bedding.....	34 45	
Isaac L. Libby, for cash paid for wash- ing Police Station, feeding destitute persons and repairing bedding.....	33 10	
Waterbury Button Co., for police buttons	81 00	
A. C. Wright & Co., for tea, coffee, fish, sugar, crackers, &c.....	115 17	
Buttrick & Co., for bread, matches, brooms, &c.....	36 40	
	<hr/>	
<i>Amounts carried forward,.....</i>	\$1,635 85	\$41,627 00

<i>Amounts brought forward</i> ,.....	\$1,635 85	\$41,627 00
Paid for SUNDRIES:		
To Albert Wheeler, for matches.....	7 20	
George Thatcher, for repairing clock, Police Station.....	2 00	
C. P. Talbot & Co., for soda ash and chloride of lime.....	74	
C. R. Kimball, for insect powder	2 00	
J. R. Hayes, for mixture of valerian....	60	
F. P. Coggeshall & Son, for stationery..	10 15	
H. C. Church & Son, for stationery.....	4 83	
Joshua Merrill & Son, for stationery...	33 44	
Jonathan Kendall, for alcohol, oil, um- ber, &c.....	3 04	
C. B. Coburn & Co., for white lead, spir- its turpentine, oil can, oil, &c.....	15 20	
Brown & Carter, for graining	49 88	
Fiske & Spalding, for opera shades let- tered, hanging shades, &c.....	27 16	
Richardson & Cutter, for repairing locks, keys, &c.....	5 40	
Alfred Barney, for brooms.....	4 00	
Daniel Gage, for ice for 1873	23 40	
Jacob Rogers & Co., for hardware.....	15 06	
H. B. Shattuck, for locks, ice chisel, saw- horse, axe, &c.....	33 72	
Fielding & Bartlett, for locks.....	1 89	
H. H. Wilder & Co., for iron pails, lead pipe, rubber hose, repairing force pump, solder, labor, &c.....	54 13	
S. G. Mack & Co., for register, cleaning furnace, and pipe.....	8 00	
N. J. Wier & Co., for iron sink, lead pipe &c.	5 06	
Samuel Beck, for putting up stove-pipe..	3 00	
John White, for teaming rope, &c.....	4 00	
F. & E. Bailey, for prescription.....	93	
Appropriation for Roads and Bridges, for coal, wood, and labor.....	608 73	
Appropriation for Water Works, for ser- vice pipe and use of water.....	21 84	
Appropriation for School-houses, for lum- ber, nails, hardware, paint, glass, &c	48 49	
Appropriation for Schools, for brooms, brushes, mats, mop-handles, &c....	23 35	
<i>Amounts carried forward</i> ,.....	\$2,653 09	\$41,627 00

<i>Amounts brought forward,.....</i>	\$2,653 09	\$41,627 00
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Paid for SUNDRIES :

To William Rock, for injuries received in acting as a Police Officer under direction of the City Marshal.....	65 00	
A. B. Foss, for medicine, in consequence of injuries received while on duty as a Police Officer.....	15 60	
William Bass, for professional services rendered A. B. Foss.....	76 00	
H. R. Barker & Co., for hose bibbs and filters, pipe, labor, &c.....	50 44	
Tighe & Quinn, for blacksmith work...	1 50	
J. A. Brabrook, for straps and wristers..	2 50	
John L. Powers, for whitewashing Police Station, materials, &c.....	94 50	
J. F. Puffer, for desk at Police Station..	27 00	
Benner Brothers, for rope mat.....	6 60	
Crosby Furniture Co., for iron handles, and turning.....	3 90	
M. C. Pratt & Co., for black walnut lumber.....	16 79	
Offutt & Whitaker, for lanterns, mattresses, dippers, oil cloth, spoons, teapots, repairing stoves, trimming lanterns, table, zinc, fluid, &c.....	96 65	
S. A. Scripture & Co., for crackers.....	64 09	
T. A. Sanborn, for whitewashing.....	16 00	
Bachelor, Dumas & Co., for making record books.....	11 75	
Marin & Jewett, for blankets.....	32 00	
George W. Norris, for horses and carriages.....	11 00	
Joseph H. Smith, for professional services at Police Station.....	5 00	
Hermon J. Smith, for professional services at Police Station &c.....	8 00	
Edward H. Hoskin, for professional services analyzing crops of fowls poisoned	10 00	
	<hr/>	3,267 41
To amount of Superintendent of Public Buildings' bills for the year.....	178 09	
	<hr/>	178 09
Whole expenditure for the year.....		45,072 50
Balance undrawn January 1, 1874.....		7,529 86
		<hr/>
		\$52,602 36

FIRE DEPARTMENT.

Balance undrawn, January 1, 1873.....	\$5,689 45	
Appropriated and assessed in 1873.....	35,000 00	
	<u> </u>	\$40,689 45

RECEIPTS.

*Received into the Treasury from various sources.....	824 02	
	<u> </u>	824 02
		<u><u>\$41,513 47</u></u>

EXPENDITURES.

Paid CHIEF ENGINEER and ASSIST- ANT ENGINEERS :

To George Hobson, Chief Engineer, salary to January 1, 1874.....	1,400 00	
Charles H. Arlen, Assistant Engineer to November 1, 1873.....	125 00	
Samuel W. Taylor, Assistant Engineer to November 1, 1873.....	125 00	
William W. Bates, Assistant Engineer to November 1, 1873.....	125 00	
Edward S. Hosmer, Assistant Engineer to November 1, 1873.....	125 00	
Hiram N. Hall, Assistant Engineer and Clerk for the Board of Engineers to November 1, 1873.....	150 00	
	<u> </u>	2,050 00
<i>Amount carried forward,</i>		<u><u>\$2,050 00</u></u>

* See page 13.

Amount brought forward,..... \$2,050 00

Paid to FIREMEN:

To Firemen's annual time pay to November
1, 1873..... 10,761 70

10,761 70

Paid for services as DRIVERS and
STEWARDS, &c., of STEAM FIRE
ENGINES:

To Charles A. Lord, No. 1..... 754 00
Henry Boynton, No. 2..... 754 00
George B. Whitney, No. 3..... 754 00
Charles Durkee (Hook and Ladder).... 288 00
Halsie J. Foster (Hook and Ladder).... 414 00
William A. Charters (Hook and Ladder) 28 00

2,992 00

Paid for HAY and GRAIN, &c., for
HORSES for STEAM FIRE EN-
GINES:

To W. E. Livingston, for grain..... 170 43
Samuel N. Wood & Son, for grain..... 9 34
Rogers & Lord, for grain..... 264 72
Peabody & Richardson, for oats..... 106 63
A. L. Waite, for oats..... 58 00
George Hobson, for hay and straw..... 146 98
Sydney Davis, for straw..... 20 72
A. J. Trull, for straw..... 45 60
T. J. McDuffie, for straw..... 49 79
C. O. Corliss, for straw..... 21 94
Appropriation for Paupers, for hay.... 229 27
Milton Fox, for carrots..... 40 05
J. B. Bailey, for straw..... 14 10

1,177 57

Paid for HORSES TO DRAW EN-
GINES, HOOK AND LADDER AND
HOSE CARRIAGES TO FIRES, &c.:

To George S. Butters, for horses..... 887 00
D. G. Leavitt, for horses..... 126 00
C. H. Fletcher, for horses..... 45 00
George W. Norris, for horses..... 68 00
John F. Noyes, for horses..... 33 00
George L. Huntoon, for horses..... 18 00

1,177 00

Amount carried forward,..... \$18,158 27

Amount brought forward,..... \$18,158 27

Paid for SHOEING HORSES, &c. :

To A. H. & J. H. Abbott.....	133 32	
M. V. B. Libbey.....	37 55	
Fay & Burk.....	25 40	
	<hr/>	196 27

Paid for SUNDRIES :

To Appropriation for Water Works, for service pipe, labor, and use of water...	8,755 32	
Appropriation for Roads and Bridges, for coal, cement, wood, labor, teaming, &c.....	563 95	
Appropriation for School-houses, for lumber, nails, paint, hardware, glass, &c.....	91 91	
Appropriation for Schools, for brooms, &c.....	1 25	
Reserved Fund, for heating double Engine-house with steam, for one year ending December 31, 1873.....	150 00	
Torrey E. Stratton, for services as Engineer of Steamer No. 3.....	300 00	
Torrey E. Stratton, for services as operator of Fire Alarm Telegraph.....	700 00	
John F. Lord, for labor on hydrants, &c.....	178 06	
John H. Powers, for labor on hydrants, &c.....	57 31	
Charles Temple, for labor on hydrants, &c.....	30 62	
J. J. Locke, for labor on hydrants, &c.....	12 00	
H. J. Foster, for labor on hydrants, &c.....	13 12	
William Charters, for labor on pipe, hydrants, filling cisterns, &c.....	249 37	
Martin Coolidge, for labor on water pipe	43 75	
J. G. Merchant, for services as fireman of Relief Steamer.....	27 08	
James P. Roberts, for services as Engineer of Relief Steamer.....	75 00	
James P. Roberts, for labor with Steamer	5 00	
George Maddocks, for labor filling cisterns, &c.....	14 00	
William Myers, for labor at reservoir...	5 25	
William H. Phelan, for labor with Steamer.....	3 75	
Charles Laflam, for labor at reservoir...	12 25	
	<hr/>	
<i>Amounts carried forward</i> ,.....	\$11,288 99	\$18,354 54

<i>Amounts brought forward,.....</i>	\$11,288 99	\$18,354 54
Paid for SUNDRIES:		
To William Doyle, for labor on Engine at Poor Farm.....	5 00	
Aaron F. Stearns, for labor on hydrants and filling cisterns.....	28 44	
A. C. Stearns, for labor with Steamer..	2 50	
Torrey E. Stratton, for labor with Steamer.....	5 00	
John E. Leavitt, for labor on pipes, &c.	10 50	
Charles S. Hibbert, for labor with Steam- er No. 2.....	17 50	
William Clifford, for labor on hose.....	5 62	
Hunneman & Co., for setting flues, wrought iron grate, valves, repairing guages, brass castings, labor, &c....	1,128 67	
N. E. Linen Hose Manufacturing Co., for rubber lined hose, Allen's coup- lings, &c.....	625 00	
Swett & Clark, for three hose reels and runners and extra pole.....	312 00	
H. R. Barker & Co., for repairing hy- drants, pipes, couplings, brackets, hydrant covers, repairing telegraph wire, gaskets, elbows, labor, &c.....	269 07	
T. R. Garity & Co., for felting, hose bibbs, pipe, labor, &c.....	63 02	
George W. Hobart, for nozzle springs..	2 00	
Hallowell & Wight, for hydrant chucks, couplings, repairing hydrants, re- ducers, brass castings, zinc, labor, &c	471 43	
Allen Fire Department Supply Co., for rubber pipe, stock and spray nozzle, &c.....	126 50	
S. P. Pierce, for copper goose neck, cop- per boiler, labor, &c.....	19 90	
Josiah Gates & Sons, for hose, couplings, repairing hose, &c.....	297 81	
Charles Chamberlin, for ladder hooks and iron buckets.....	2 75	
J. A. Fogg, for zinc castings	41 02	
Daniel Cushing & Co., for cast iron con- ductors, &c.....	10 00	
J. W. Murkland, for labor on hose rolls, &c.....	16 55	
<i>Amounts carried forward,.....</i>	<u>\$14,749 27</u>	<u>\$18,354 54</u>

Amounts brought forward,..... \$14,749 27 \$18,354 54

Paid for SUNDRIES :

To Stearns & George, for insulators and riveted wire.....	9 13
C. W. Garvin, for marking brands.....	5 50
G. L. Cady, for stock and labor repairing engines.....	8 04
Chamberlin & Jockow, for bracket irons, spanners, &c.....	19 50
J. M. Torsey & Co., for hydrant boxes,	18 54
Hildreth & Rice, for plated wire guards,	8 00
John Butcher, for washers and chain...	1 06
Carleton & Hovey, for tincture of arnica and thoroughwort.....	4 00
J. R. Hayes, for liniment, ginger, acids, &c.....	19 75
C. P. Talbot & Co., for blue vitriol, &c.	229 52
Robert Wood, for medical attendance of horse.....	5 00
Matthias Mead, for stove, pipe, elbows, register box, grates, labor, &c.....	85 23
H. H. Wilder & Co., for dampers, iron pipe, zinc, tin collars, repairing pumps, solder, labor, &c.....	50 45
S. G. Mack & Co., for cast iron conductors, lantern burners, labor, &c....	13 75
Estate of William Dobbins, for labor on steamer.....	4 00
George Hobson, for cash paid for rubber hose, sawdust, express charges, &c..	14 77
Weare Clifford, for teaming pipe.....	147 00
George H. Norman, for labor on water pipe.....	91 71
Charles Durkee, for teaming water pipe,	72 00
C. H. Hanson, for teaming brick to reservoir.....	9 00
J. M. D. Johnson, for repairing carriage	7 75
Ross & Jewett, for repairing and altering hose carriage, new dutchman holder and wrench, fixing tool box, &c....	87 52
Samuel Converse, for four new hose carriages, painting hose carriages and steamers, repairing steamers, hose carriages, &c.....	1,070 83
J. A. Brabrook, for harnesses, repairing harnesses, &c.....	99 82

Amounts carried forward,..... \$16,831 14 \$18,354 54

Amounts brought forward,..... \$16,831 14 \$18,354 54

Paid for SUNDRIES:

To S. L. Butman, for repairing harnesses, &c	32 17
Jacob Rogers & Co., for hardware.....	18 26
Fielding & Bartlett, for hardware.....	22 45
Charles E. Adams, for hardware.....	7 36
Nichols & Fletcher, for manila rope and salt	18 90
C. B. Coburn & Co., for axle grease, kerosene oil, white lead, paint, &c..	15 06
Jonathan Kendall, for naptha oil, glass, sponge, kerosene oil, rotten stone, lard and sperm oils, benzine, &c....	49 76
A. L. Kittredge, for gilt hanging paper, plaster paris, labor, &c.....	39 73
Fiske & Spalding, for papering and dec- orating hall Hose No. 3, feather dusters, painting, graining, &c.....	86 17
Brown & Carter, for varnish and grain- ing, Hose No. 3.....	10 00
Cyrus E. Luscumb, for graining and varnishing	9 00
Howes & Burnham, for lumber.....	80 06
A. L. Brooks & Co., for lumber.....	19 49
C. W. Saunders & Co., for lumber.....	1 54
H. & A. Whitney, for lumber	19 20
M. C. Pratt & Co., for lumber, mould- ings, doors, &c.....	32 49
Davis, Melendy & Co., for lumber.....	7 08
Davis, Melendy & Sargent, for lumber..	67 08
William Kelley, for window sash, &c....	24 75
E. A. & A. T. Smith, for concrete.....	135 75
Whithed & Tallant, for concrete.....	105 35
T. A. Sanborn, for mason work.....	34 70
Bennett & Moulton, for building Reser- voir on Forest street, containing twenty-two thousand gallons at three and one-half cents per gallon.....	770 00
Rollins & Sargent, for mason work.....	38 17
J. W. Bennett, for composition, felt, la- bor, teaming, &c.....	15 92
Warren C. Crosby, for drain pipe and labor.....	17 60
N. T. Staples & Sons, for drain pipe, cement and labor.....	11 56

Amounts carried forward,..... \$18,520 74 \$18,354 54

Amounts brought forward,..... \$18,520 74 \$18,354 54

Paid for SUNDRIES:

To Walter H. Goodwin, for filling pillows and bolsters.....	3 35	
Benner Brothers, for mirror.....	6 00	
W. T. Bradley, for office chairs.....	12 00	
E. B. Patch & Co., for hall clock for Hose No. 4.....	8 00	
French & Puffer, for lantern globes, lan- tern and pitcher.....	5 60	
J. W. Trumbull, for repairing locks and clocks.....	2 25	
J. W. White, for white duck.....	4 18	
Samuel Horn & Co, for tallow.....	1 00	
H. Hosford & Co., for cotton cloth.....	8 20	
O. D. Witherell, for cannel coal.....	74 97	
Lowell Gas Light Co., for cannel coal and coke.....	12 50	
Boston and Lowell and Nashua and Low- ell Railroad Co., for freight on coal, &c.....	7 56	
Estate of N. G. Furnald, for wood.....	2 50	
Alfred Barney, for brooms, pails, and rattan.....	15 25	
George P. Palmer, for polishing oil and cans.....	5 25	
Isaac Deming, for cotton waste.....	18 20	
Middlesex Company, for wool waste....	13 00	
Lowell Manufacturing Company, for wool waste.....	14 00	
H. H. Barnes, for red felt.....	2 50	
F. P. Coggeshall & Son, for stationery,	4 83	
Bachelor, Dumas & Co., for ruling roll call.....	1 80	
		18,743 68
To amount of Superintendent of Public 'Buildings' bills.....	211 69	
		211 69
Whole expenditure for the year.....		37,309 91
Balance undrawn, January 1, 1874.....		4,203 56
		<u>\$41,513 47</u>

SEWERS AND DRAINS.

Balance undrawn January 1, 1873.....	\$2,457 06	
Appropriated and assessed in 1873.....	75,000 00	
	<u> </u>	\$77,457 06

RECEIPTS.

Received for SEWER ASSESSMENTS,
&c.:

IN JANUARY.

Of Samuel Beard, for sewer assessment....	81 71	
Ellen, Mary and Ann Cunningham, for sewer assessment.....	24 70	
	<u> </u>	106 41

IN MARCH.

Of John and Eliza McCarron, for sewer as- sessment.....	25 86	
John O'Connor, for sewer assessment....	89 99	
	<u> </u>	115 85

IN APRIL.

Of Michael Nolan, for sewer assessment....	21 76	
R. Chatterton, for sewer assessment....	10 97	
Jacob Nichols, for sewer assessment.....	53 42	
	<u> </u>	86 15

Amount carried forward,..... \$77,765 47

Amount brought forward,..... \$77,765 47

Received for SEWER ASSESSMENTS,
&c.:

IN MAY.

Of Edward F. Coburn, for sewer assessment,	47 34	
Stephen W. Huse, for sewer assessment,	52 69	
Jacob Rogers, for entering Pawtucket street sewer.....	10 00	
Jane Knox, for an old sewer assessment against Daniel Bowles of Littleton, so as to have privilege of entering Branch street sewer.....	18 35	
	<hr/>	128 38

IN JUNE.

Of Thomas Rowland, for sewer assessment,	127 49	
Alfred Brown, for sewer assessment...	23 59	
E. B. Patch, for sewer assessment.....	47 98	
Jona. Edgerly, for entering Charles street sewer.....	30 00	
	<hr/>	229 06

IN JULY.

Of Lowell Card Co., for entering Market street sewer.....	20 00	
Pamelia S. and Mary E. Drew, for sewer assessment.....	19 89	
O. McNamara, for sewer assessment....	130 49	
S. N. Wood, for sewer assessment.....	249 51	
S. N. Wood, for sewer assessment.....	49 31	
	<hr/>	469 20

IN SEPTEMBER.

Of Mrs. George F. Parks, for sewer assess- ment.....	43 48	
Olive Swan, for sewer assessment.....	31 94	
Frank Cox, for sewer assessment.....	126 77	
	<hr/>	202 19

IN OCTOBER.

Of Jeroboam Howe, for sewer assessment...	125 62	
Augustus J. Howe, for sewer assessment,	44 89	
	<hr/>	170 51

Amount carried forward,..... \$78,964 81

Amount brought forward,..... \$78,964 81

IN NOVEMBER.

Received for SEWER ASSESSMENTS,
&c.:

Of George C. Hedrick, for sewer assessment,	26 28
Thomas H. Elliott, for sewer assessment,	28 72
Dennis Cleary, for sewer assessment....	91 82
John Carney, for sewer assessment.....	28 92
John W. Brock, for sewer assessment..	21 06
John Hungerman, for sewer assessment..	42 22
John McKiernan, for sewer assessment .	41 79
Charles Cowley, for sewer assessment...	93 84
A. D. Slade, for sewer assessment	36 52
Robert Ewan, for sewer assessment.....	49 51
George Stevens, for sewer assessment....	56 61

517 29

IN DECEMBER.

Of John Preston, for sewer assessment.....	59 16
John Preston, for sewer assessment.....	61 42
Joseph S. Green, for sewer assessment..	55 20
Bridget McCue, for sewer assessment...	43 20
Heirs of John Colman, for sewer assess- ment	71 74
Bridget O'Conner, for sewer assessment,	24 01
Sarah Fay, for sewer assessment.....	19 92
James McCarron, for sewer assessment..	82 76
Patrick Marr, by C. J. Eastman, for sewer assessment.....	49 51
T. McOwen, by City of Lowell, for sewer assessment	43 51
J. W. Perkins, by City of Lowell, for sewer assessment.....	70 46
D. S. Hoyt, by City of Lowell, for sewer assessment.....	70 46
J. W. Perkins, by City of Lowell, for sewer assessment.....	51 09
J. Christy, by City of Lowell, for sewer assessment	84 96
Hugh Morrow, by Harry R. Rice, for sewer assessment.....	72 23
S. D. Holmes, by Harry R. Rice, for sewer assessment	50 56
T. McOwen, by Harry R. Rice, for sewer assessment	46 22

Amounts carried forward,..... \$956 41 \$79,482 10

<i>Amounts brought forward</i> ,.....	\$956 41	\$79,482 10
Received for SEWER ASSESSMENTS, &c. :		
Of Michael Buckley, by G. W. Norris, for sewer assessment.....	51 37	
Appropriation for School-houses, for sew- er assessment.....	248 18	
Appropriation for School-houses, for sew- er assessment.....	187 89	
Appropriation for Commons, for sewer assessment.....	512 00	
	<hr/>	1,955 85
		<hr/>
		\$81,437 95
		<hr/>

EXPENDITURES.

Paid for CONSTRUCTING SEWERS in GORHAM and CENTRAL STREETS; for LABOR performed and MATERIALS furnished:		
To F. Frye & Co., and Luther Kittredge & Son, as per contract No. 1.....	5,321 50	
	<hr/>	5,321 50
Paid for CONSTRUCTING SEWER in CENTRAL STREET; for LABOR per- formed and MATERIALS furnished:		
To N. T. Staples & Sons, as per contract, No. 2.....	4,404 80	
	<hr/>	4,404 80
Paid for RECONSTRUCTING SEW- ERS in SUFFOLK and MOODY STREETS; for LABOR performed and MATERIALS furnished:		
To F. Frye & Co., and Luther Kittredge & Son, as per contract No 3. ...	21,368 77	
F. Frye and L. Kittredge & Son, for spruce planking.....	18 03	
Luther Kittredge & Son, for Portland pipe and labor.....	33 00	
	<hr/>	21,419 80
<i>Amount carried forward</i> ,.....		<hr/>
		\$31,146 10

<i>Amount brought forward</i> ,.....		\$31,146 10
Paid for CONSTRUCTING SEWER in LAWRENCE STREET; for LABOR performed and MATERIALS furnish- ed:		
To N. T. Staples & Sons, as per contract, No. 4.....	3,153 80	3,153 80
Paid for CONSTRUCTING SEWER in EAST MERRIMACK STREET; for LABOR performed and MATERI- ALS furnished:		
To James Slavin, as per contract No. 5.....	490 00	490 00
Paid for RECONSTRUCTING SEWER in DUTTON STREET; for LABOR performed and MATERIALS fur- nished:		
To F. Frye & Co., and Luther Kittredge & Son, as per contract, No. 6.....	2,305 85	
Luther Kittredge & Son, for plank and labor.....	54 17	
Cole & Nichols, for flushing gates, brass, finishing, &c.....	30 43	
		2,390 45
Paid for CONSTRUCTING SEWERS in GROVE and SCHOOL STREETS; for LABOR performed and MATERI- ALS furnished:		
To N. T. Staples & Sons, as per contract, No. 7.....	2,825 88	2,825 88
Paid for CONSTRUCTING SEWER in HOWARD STREET; for LABOR per- formed and MATERIALS furnished:		
To F. Frye & Co., and Luther Kittredge & Son, as per contract, No. 8.....	4,251 55	
Luther Kittredge & Son, for plank.....	13 75	
Luther Kittredge & Son, for pipe and labor.....	14 80	
		4,280 10
<i>Amount carried forward</i> ,.....		\$44,286 33

<i>Amount brought forward,</i>		\$44,286 33
Paid for CONSTRUCTING OUTLET SEWER from HOWARD STREET to BOSTON AND LOWELL RAIL- ROAD; for LABOR performed and MATERIALS furnished:		
To F. Frye & Co., and Luther Kittredge & Son, as per contract, No. 9	1,533 00	
Josiah B. French, for amount awarded as per Resolution, for land taken for outlet sewer from Howard street to Boston and Lowell Railroad.....	154 83	
	<hr/>	1,687 83
Paid for CONSTRUCTING SEWER in HIGHLAND STREET; for LABOR performed and MATERIALS furnish- ed:		
To N. T. Staples & Sons, as per contract, No. 10.....	2,820 42	
	<hr/>	2,820 42
Paid for CONSTRUCTING SEWER in THORNDIKE STREET; for LABOR performed and MATERIALS furnish- ed:		
To James Slavin, as per contract, No. 11..	2,907 75	
James Slavin, for labor performed and materials furnished to connect vault of Thorndike Manufacturing Com- pany with sewer in compensation for the right of way through their prop- erty.....	46 26	
	<hr/>	2,954 01
Paid for SURVEYS, PLANS, &c , for a NEW SYSTEM OF SEWERAGE:		
To David W. Cunningham, Engineer.....	2,355 00	
Carlos Smaller, Assistant Engineer....	1,500 00	
C. H. M. Blake, Assistant Engineer...	532 41	
Charles A. Bryant, Assistant Engineer,	216 00	
Charles A. Bryant, Rodman.....	210 00	
Charles A. Bryant, Leveller	237 50	
Edward Swasey, Assistant Engineer...	164 00	
Edward Swasey, Rodman.....	56 00	
William E. Smaller, Rodman.....	28 00	
	<hr/>	
<i>Amounts carried forward,</i>	\$5,298 91	\$51,748 59

<i>Amounts brought forward,.....</i>	\$5,298 91	\$51,748 59
Paid for SURVEYS, PLANS, &c., for a NEW SYSTEM OF SEWERAGE:		
To William E. Smaller, Chainman.....	158 00	
J. L. Hayward, Draughtsman.....	495 00	
J. H. Shepard, Chainman.....	203 00	
J. H. Shepard, Rodman.....	138 00	
William H. Dabney, Jr., Chainman....	28 00	
William H. Dabney, Jr., Rodman.....	52 00	
Frederick Guest, for labor.....	4 00	
Matthew Carney, for labor.....	73 50	
Patrick Ryan, for labor.....	73 50	
Edward Farrell, for labor.....	73 50	
John Curran, for labor.....	75 25	
D. W. Cunningham, for cash paid for repairing tools, pails, horse car fares, measuring pins, chalk, stencil brush, emery paper, postage, maps, cotton cloth, matches, bowl and pitcher, match safe, use of boat, stakes, &c..	31 13	
F. W. Lincoln, Jr., & Co., for Chatter- man metallic tapes, thermometer, &c,	10 35	
C. J. Smaller, for cash paid for repairing level	13 50	
H. Hosford & Co., for cotton.....	4 50	
George W. Pearson, for drafting-boards and repairing sighting staff.....	6 00	
H. B. Shattuck, for rope	50	
William Whitmore, for large letter " B " of brass	60	
Appropriation for Water Works, for ce- ment	7 88	
F. P. Coggeshall & Son, for envelopes, records, pencils, letter paper, Sibe- rian leads, erasers, ink, mucilage, pens, tracing paper, drawing paper, rubber, &c.....	52 73	
J. Merrill & Son, for manila paper, &c..	5 02	
H. C. Church, for letter paper	1 63	
Superintendent of Public Buildings' bills, for labor.....	8 25	
		\$6,814 75
<i>Amount carried forward,.....</i>		\$58,563 34

* Amount expended in 1872.....	\$5,352 17
Amount expended in 1873.....	6,814 75

Total expenditure to January 1, 1874.....
 Surveys, &c., will probably be completed during
 the year 1874.

\$12,166 92

Amounts brought forward,..... \$58,563 34

Paid for DAMAGES :

To John J. McCarry, for damage to estate and property. by the overflowing of sewer in Cross street.....	100 00	
Peter Green, for damage to estate and property by the overflowing of sewer in Cross street	50 00	
	<hr/>	150 00

Paid for SUNDRIES :

To Appropriation for Roads and Bridges, for labor, cesspools, surveying, &c..	3,752 72	
Appropriation for Fire Department, for labor.....	73 00	
W. E. Livingston, for cement and brick,	269 20	
N. T. Staples & Sons, for Portland pipe, brick, labor, &c.....	862 39	
Warren C. Crosby, for drain pipe and labor.....	159 90	
F. Frye & Co., for mason work, paving, brick, &c	811 87	
Ira Hartwell, for mason work.....	234 00	
Henry W. Clapp, for drop basins and sewer cap..	144 00	
Cole & Nichols, for sewer frames and covers.....	109 65	
Pevey Brothers, for castings.....	50 24	
C. W. Saunders & Co., for spruce plank,	204 05	
H. & A. Whitney, for lumber.....	21 36	
M. C. Pratt & Co., for sawing.....	50	
Hapgood Wright & Co., for rubber boots,	13 00	
M. C. Huntoon, for rubber boots.....	12 00	
E. A. & A. T. Smith, for brick.....	20 90	
Buttrick & Co., for salt.....	15 40	
Lane & Merriam, for salt.....	55	
Stickney & Spofford, for sperm oil.....	9 00	
H. R. Barker & Co., for strainer, pipe and labor.....	11 75	
John L. Powers, for mason work.....	14 87	
C. B. Coburn & Co , for pails, candles, sperm oil, manila rope, &c.....	11 74	
James Slavin, for catch basins.	18 00	
T. Costello & Co., for lead pipe, solder and labor.....	9 02	
	<hr/>	
<i>Amounts carried forward</i> ,.....	\$6,829 11	\$58,713 34

<i>Amounts brought forward,.....</i>		\$6,829 11 , \$58,713 34
* Paid for SUNDRIES:		
To W. P. Brazer & Co., for rubber coat....	4 50	
H. H. Wilder & Co., for copper pump, &c.....	4 00	
S. G. Mack & Co., for pails and dipper..	3 80	
Jacob Rogers & Co., for shovels.....	15 86	
Moran & Smith, for dipper, bolts and repairing pump box.....	80	
Boston and Lowell and Nashua and Lowell Railroad Co., for freight on sewer caps.....	3 65	
Boston, Clinton and Fitchburg Railroad, for freight on castings.....	60	
	<hr/>	6,862 32
Whole expenditure for the year.....		65,575 66
Balance undrawn January 1, 1874.....		15,862 29
		<hr/>
		\$81,437 95
		<hr/>

COMMONS.

Balance undrawn January 1, 1873.....	\$1,576 00	
Appropriated and assessed in 1873.....	6,000 00	
	<hr/>	\$7,576 00

RECEIPTS.

*Received into the Treasury from various sources.....	1,428 77	
	<hr/>	1,428 77
		<hr/> <hr/>
		\$9,004 77

EXPENDITURES.

Paid for SUNDRIES :

To Appropriation for Roads and Bridges, for edgestone, cinders, use of teams, labor, &c., for Centralville Park....	958 62
William Andrews, for edgestone, Cen- tralville Park.....	800 00
Warren C. Crosby, for drain pipe, Cen- tralville Park.....	26 85
Appropriation for Roads and Bridges, for teaming, labor, &c., South Com- mon.....	1,531 78
W. E. Livingston, for cement and sand, South Common....	93 10
	<hr/>
<i>Amount carried forward,.....</i>	\$3,410 35

* See page 14.

<i>Amount brought forward,.....</i>	\$3,410 35
Paid for SUNDRIES :	
To Appropriation for Sewers and Drains, for sewer assessment, South Common . . .	512 00
E. A. & A. T. Smith, for concrete, South Common.....	313 62
Charles W. Kimball, for paving stone, South Common.....	79 00
A. P. Quimby, for painting fence, South Common.....	205 00
F. A. Cutter, for shade trees, South Common.	26 50
George Barrows, for setting trees, South Common.....	14 75
G. F. Witherell, for loam, South Common	7 00
Davis & Co., for stone chips, South Com- mon.....	5 00
Appropriation for Roads and Bridges, for street scrapings, cinders, grading, use of teams, labor, &c., North Com- mon.....	789 00
E. A. & A. T. Smith, for concrete, North Common.....	471 30
Whithed & Tallant, for concrete, North Common.....	153 84
Ross & Jewett, for bolting trees, North Common.....	9 00
Appropriation for Roads and Bridges, for use of teams, labor, filling, &c., Park Garden	22 50
E. A. & A. T. Smith, for concrete, Park Garden.....	537 24
Appropriation for Roads and Bridges, for labor, Monument Square.	2 00
A. L. Kittredge, for retouching letters on monument, shellac, and varnishing guns, Monument Square.....	11 00
Appropriation for Water Works, for use of water for North and South Com- mons to April 1, 1874.....	20 62
Appropriation for Roads and Bridges, for cleaning walks.....	6 76
George W. Norris, for horse and wagon to Pelham.....	3 00
Appropriation for School-houses for paints, oil and screws.....	36 17
<i>Amount carried forward,.....</i>	\$6,635 65

<i>Amount brought forward</i> ,.....	\$6,635 65	
Paid for SUNDRIES :		
To Michael Brennan, for gravel, South Common.....	32 00	
Milton Aldrich, for turning windlass...	2 50	
Colloid Paint Co., for paint.....	27 00	
Boston and Lowell Railroad Company's Fast Freight Department, for transportation of paint	3 55	
John Wheeler, for painting fence on Broadway.....	21 12	
H. & A. Whitney, for lumber.....	41 47	
A. L. Brooks & Co., for lumber.....	54 08	
Howes & Burnham, for lumber.....	3 09	
H. R. Barker & Co., for fountain jet, pipe, couplings and labor.....	7 01	
Jacob Rogers & Co., for hardware.....	3 73	
N. T. Staples & Sons, for drain pipe...	8 66	
C. B. Coburn & Co., for putty and paint brush	1 60	
	<hr/>	6,841 46
To amount of Superintendent of Public Buildings' bills for the year.....	73 29	
	<hr/>	73 29
Whole expenditure for the year.....		\$6,914 75
Balance undrawn January 1, 1874.....		2,090 02
		<hr/>
		\$9,004 77
		<hr/>

PRINTING AND ADVERTISING.

Balance undrawn, January 1, 1873.....	\$916 08	
Appropriated and assessed in 1873.....	2,000 00	
	<hr/>	\$2,916 08
Transferred from Appropriation for Interest on Water Works.....	500 00	
	<hr/>	500 00
		<hr/> <hr/>
		\$3,416 08

EXPENDITURES.

Paid Marden & Rowell, for printing (1,200 copies) Auditor's Report.....	.448 17
S. B. Simonds, for binding (1,200 cop- ies) Auditor's Report.....	24 00
Marden & Rowell, for printing (2,000 copies) Mayor's Address.....	139 00
S. B. Simonds, for binding (2,000 cop- ies) Mayor's Address.....	15 00
Stone & Huse, for printing (325 cop- ies) Municipal Register.....	218 86
Marden & Rowell, for printing and ad- vertising.....	458 80
Stone & Huse, for printing and adver- tising.....	538 67
B. H. Penhallow, for printing.....	166 25
W. S. Simons, for posting notices, &c.	8 00
John L. Hunt, for printing and adver- tising.....	71 88
John L. Hunt, for two copies of Morn- ing Times from August 23, 1873, to January 1, 1874.....	4 26
	<hr/>
<i>Amount carried forward</i>	\$2,092 89

<i>Amount brought forward</i> ,.....	\$2,092 89	
Paid Edwin A. Hills, for printing six reams of letter and note paper and 1000 envelopes for City Solicitor.....	30 50	
Edwin A. Hills, for printing and advertising	124 75	
Journal Newspaper Co., for advertising sewer proposals.....	14 62	
Knapp & Morey, for two copies of Daily Citizen and News from January 1, 1873, to January 1, 1874	10 00	
Knapp & Morey, for printing and advertising	314 52	
Bacheller, Dumas & Co., for binding, lettering, and ruling City Documents.....	371 62	
Joshua Merrill & Son, for binding, &c.	46 90	
S. B. Simonds, for binding City Documents.....	6 50	
	<hr/>	3,012 30
Whole expenditure for the year.....		3,012 30
Balance undrawn January 1, 1874.....		403 78
		<hr/>
		\$3,416 08
		<hr/>

LIGHTING STREETS] AND PUBLIC BUILDINGS.

Balance undrawn January 1, 1873.....	\$1,690 88	
Appropriated and assessed in 1873.....	18,000 00	
	<u> </u>	\$19,690 88

RECEIPTS.

*Received into the Treasury from various sources.....	115 66	
	<u> </u>	115 66
Transferred from Appropriation for Interest on Water Works.....	2,000 00	
	<u> </u>	2,000 00
		<u><u>\$21,806 54</u></u>

EXPENDITURES.

Paid for LIGHTING STREETS :

To Lowell Gas Light Company, for gas consumed in street burners during the year 1873 (796,957½ hours, at 1⅔ cents per hour).....	10,958 16
H. R. Barker & Co., for gas fixtures, fittings, labor, &c.....	546 81
H. H. Wilder & Co., for lanterns, repairing lanterns, oil cans, lamp tubes, sprinkler pot, copper lantern frame, repairing lamps, labor, &c.....	90 19
	<u> </u>
<i>Amount carried forward,</i>	\$11,595 16

* See page 14.

Amount brought forward,..... \$11,595 16

Paid for LIGHTING STREETS:

To Appropriation for Roads and Bridges, for board of horses, shoeing horses, labor, &c.....	626 72
Fred. A. Bates, for lighting.....	912 50
H. H. Carter, for lighting.....	11 09
Charles E. Dodge, for lighting.....	89 36
William Kennedy, for lighting.....	471 00
Charles E. Munn, for lighting.....	193 96
William E. Kenneson, for lighting....	70 40
H. J. McAlvin, for lighting.....	5 33
Fred. Richardson, for lighting.....	74 13
E. W. Young, for lighting.....	104 23
Willie Shehan, for lighting.....	6 00
B. C. Davis, for lighting.....	1 71
E. A. Davis, for lighting.....	9 48
Charles Stearns, for lighting.....	26 25
C. B. Coburn & Co., for glass, sperm oil, glazier's diamond, alcohol, fluid, var- nish, benzine, white lead, spirits tur- pentine, paint, whiting, putty, em- ery paper, &c.....	284 32
Jonathan Kendall, for alcohol, naptha, &c.....	118 29
Charles E. Adams, for lamps, globes, lamp posts, wrench, &c.....	718 06
Cole & Nichols, for lamp posts.....	238 14
Pevey Brothers, for lamp posts and arms,	208 20
A. H. & J. H. Abbott, for ironing, paint- ing, and lettering sleigh.....	78 67
Hallowell & Wight, for lamp post backs, cocks, &c.....	28 51
S. L. Butman, for curtains, cushions, re- pairing harness, &c.....	45 87
John G. Allen, for single harness.....	35 00
J. A. Brabrook, for shaft bells.....	75
Samuel Convers, for varnishing carriage, blankets, curry-comb, horse-brush, repairing carriages, harnesses, &c....	51 36
Harrison W. Streeter, for pung sleigh..	15 00
L. & L. J. Richards, for moving shop in City Yard.....	10 75
Parker & Cheney, for ladder rounds....	9 00
Fiske & Spalding, for painting and glaz- ing lanterns.....	38 20

Amount carried forward,..... \$16,077 44

<i>Amount brought forward,.....</i>		\$16,077 44	
Paid for LIGHTING STREETS:			
To Morse & Turner, for matches.....	20	00	
Isaac Deming, for cotton waste.....	18	20	
H. C. Church & Son, for waste.....	5	00	
Lowell Gas Light Co., for pipe, tapping pipe, &c.....	6	25	
Joshua Merrill & Son, for stationery...	1	00	
Clough & Sweatt, for labor on granite pavement.....	3	75	
Carleton & Hovey, for liniment.....	1	00	
Whithed & Tallant, for repairing con- crete around lamp posts.....	1	50	
Boston and Lowell Railroad Express Par- cel Department, for express on lan- tern.....		50	
Boston and Lowell and Nashua and Lowell Railroad Corporation, for freight on lamp posts and tops.....	4	50	
Michael O'Brien, for cash paid for gas for lamp post on Adams street, from November 1, 1871, to August 1, 1872, as per final settlement.....	9	00	
George W. Patterson, for damages done to wagon and other property and self, on Bridge street, on account of said street not being lighted (per order of Committee on Claims).....	10	50	
			16,158 64
Paid for LIGHTING PUBLIC BUILD- INGS:			
To Lowell Gas Light Company, for gas....	2,192	28	
			2,192 28
Whole expenditure for the year.....			18,350 92
Balance undrawn January 1, 1874.....			3,455 62
			<u>\$21,806 54</u>

REPAIRS OF PUBLIC BUILDINGS.

Balance undrawn January 1, 1873.....	\$454 31	
Appropriated and assessed in 1873.....	7,000 00	
	<hr/>	\$7,454 31

RECEIPTS.

*Received into the Treasury from various sources.....	481 08	
	<hr/>	481 08
		<hr/> \$7,935 39 <hr/>

EXPENDITURES.

Paid for SUNDRIES:

To H. & A. Whitney, for lumber.....	103 31
Howes & Burnham, for lumber.....	382 47
A. L. Brooks & Co., for lumber, &c....	234 82
Appropriation for Roads and Bridges, for shoeing horse, &c.....	12 70
Appropriation for Water Works, for service pipe and use of water.....	73 23
C. B. Coburn & Co., for glass, artists' tools, spirits turpentine, paint, white lead, shellac, varnish, twine, brushes, packing, oil, putty, manila rope, &c,	178 19
Jonathan Kendall, for Salem lead, sperm oil, varnish, alcohol, benzine, shellac, putty, umber, spirits turpentine, glass, japan, twine, &c.....	118 55
	<hr/>
<i>Amount carried forward,.....</i>	\$1,103 27

* See pages 14 and 15.

<i>Amount brought forward,.....</i>	\$1,103 27
Paid for SUNDRIES:	
To Nathan Emerson, for paint and labor....	11 53
Abner Kittredge, for curtain and roller,	1 50
Fiske & Spalding, for graining, varnish,	
brushes, paper, putty knife, labor, &c.	238 55
M. C. Pratt & Co., for lumber, mouldings,	
doors, sawing, planing, &c.....	57 58
William Kelley, for window sash, doors,	
&c.....	25 75
Griffin & Lake, for iron posts, stair rails,	
labor, &c.....	28 73
J. W. Bennett, for lumber, mouldings,	
sash, &c.....	96 41
M. W. Shorey, for Harrah's National	
Gate.....	28 00
F. L. Richardson, for calendar clock,	
(Treasurer's office).....	14 50
George Thatcher, for repairing clocks..	3 00
L. & L. J. Richards, for moving City	
stable, labor, &c.....	493 38
Richardson & Cutter, for bamboo pole..	4 00
Jacob Rogers & Co., for hardware.....	71 27
Fielding & Bartlett, for hardware.....	9 65
H. B. Shattuck, for hardware.....	2 38
Charles E. Adams, for nails.....	78
American Steam Safe Co., for expenses	
and labor on chest door (Treasurer's	
office).....	30 00
Adams & Co., for repairing sofa, carpet-	
ing, shade and fixtures, &c.....	56 05
Crosby Furniture Co., for black walnut	
tables.....	112 00
Benner Brothers, for chairs, carpet, mat,	
duck, &c.....	47 55
Offutt & Whitaker, for lamps and wick,	1 00
N. T. Staples & Sons, for drain pipe, ce-	
ment, labor, &c.....	77 75
F. Frye & Co., for cement and labor....	7 61
D. M. Prescott & Co., for whitening,	
plastering, stock and teaming.....	184 62
Page & Barnard, for mason work.....	61 25
William Waugh, for slate, zinc, solder,	
labor, &c.....	66 30
H. R. Barker & Co., for reflectors for	
Huntington Hall.....	575 00
<i>Amount carried forward,.....</i>	\$3,409 41

<i>Amount brought forward,.....</i>	\$3,409 41	
Paid for SUNDRIES :		
To H. R. Barker & Co., for reflectors in store, City Government Building, brackets, nipples, pipe, repairing boilers City Government Building, use of steam pipe, globe valves, chan- deliers, labor, &c.....	719 34	
John Butcher, for bolts, iron, &c.....	8 38	
Estate of William Dobbins, for repairing boilers, City Government Building,	8 00	
Chamberlin & Jockow, for hinges, hooks, chisels, strap irons, &c.....	7 75	
A. D. & O. N. Clark, for bolts and wash- ers.....	4 08	
Robert Goulding, for slate, zinc, nails, solder, labor, &c.....	37 75	
Alanson Nichols, for brick, cement, lime, and sand.....	26 30	
Runels & Davis, for stone and granite chips.....	9 17	
Davis & Co., for stone threshold.....	11 00	
Clough & Sweatt, for stone posts, curb- stone, labor, &c.....	71 25	
S. G. Mack & Co., for stove, lead pipe, labor, &c.....	18 30	
T. Costello & Co., for sinks, water clos- ets, lead traps, lead pipe, plumbing, labor, &c.....	68 09	
H. H. Wilder & Co., for iron sinks.....	8 75	
N. J. Wier & Co., for stove pipe, repair- ing stoves, &c.....	19 02	
William Roberts, for teaming.....	3 75	
Michael Brady, for teaming.....	3 75	
William McCarthy, for teaming.....	3 00	
William Kelley, for teaming.....	75	
	<hr/>	4,437 84
To amount of Superintendent of Public Buildings' bills for the year.....	887 71	
	<hr/>	887 71
Whole expenditure for the year.....		5,325 55
Balance undrawn January 1, 1874.....		2,609 84
		<hr/>
		\$7,935 39
		<hr/>

CITY LIBRARY.

Balance undrawn January 1, 1873.....	\$256 74	
Appropriated and assessed in 1873.....	1,500 00	
	<u> </u>	\$1,756 74

RECEIPTS.

*Received into the Treasury from various sources.....	873 90	
	<u> </u>	873 90
*Received of County of Middlesex on account of Dog Licenses.....	2,142 86	
	<u> </u>	2,142 86
Transferred from Appropriation for Interest on Water Works.....	1,000 00	
	<u> </u>	1,000 00
		<u><u>\$5,773 50</u></u>

EXPENDITURES.

Paid Marshall H. Clough, Librarian (salary).....	1,200 00	
	<u> </u>	1,200 00
Paid for SUNDRIES:		
To Hocum Hosford, for rent of rooms in Masonic Temple building, (as per lease)	1,200 00	
Hocum Hosford, for heating rooms.....	200 00	
Lowell Gas Light Co., for gas.....	196 61	
	<u> </u>	
<i>Amounts carried forward,.....</i>	\$1,596 61	\$1,200 00

<i>Amounts brought forward,.....</i>	\$1,596 61	\$1,200 00
Paid for SUNDRIES :		
To Marshall H. Clough, for services compiling catalogue.....	200 00	
Jacob Rogers & Co., for umbrella stand.	7 80	
Hildreth & Rice, for O. G. railing and banding.....	15 71	
Fiske & Spalding, for painting, glazing, and lettering lantern.....	16 10	
Marshall H. Clough, for cash paid out for books, cleaning rooms, dextrine, soap, postage stamps, and expressage,	44 32	
H. R. Barker & Co., for gas fixtures and labor	35 21	
Appropriation for Schools, for floor mats,	7 00	
Appropriation for Water Works, for use of water.....	5 54	
Appropriation for Roads and Bridges, for sawdust.....	1 00	
F. P. Coggeshall & Son, for books.....	520 27	
Joshua Merrill & Son, for books.....	44 02	
J. J. Judkins, for books.....	57 07	
Joel Powers, for copy of "Seward's Travels".....	5 00	
Henry Wilson, for copy of "Rise and Fall of Slave Power in America" ..	5 00	
Bacheller, Dumas & Co., for binding, ruling, &c.....	136 65	
H. C. Church, for stationery.....	1 70	
Stone & Huse, for printing catalogues..	1,272 60	
Abel Whitney, for books.....	26 09	
Knapp & Morey, for printing and advertising.....	4 25	
Marden & Rowell, for printing and advertising	31 41	
B. H. Penhallow, for printing.....	11 00	
E. A. Hills, for advertising.....	1 75	
		4,046 10
Whole expenditure for the year.....		5,246 10
Balance undrawn January 1, 1874.....		527 40
		<u>\$5,773 50</u>

SALARIES.

Balance undrawn January 1, 1873.....	\$234 22	
Appropriated and assessed in 1873.....	18,000 00	
	<u> </u>	\$18,234 22
Transferred from Appropriation for Interest on Water Works.....	1,500 00	
	<u> </u>	1,500 00
		<u><u>\$19,734 22</u></u>

EXPENDITURES.

Paid to Francis Jewett, Mayor.....	1,500 00
John H. McAlvin, Treasurer and Collector.....	2,500 00
John H. McAlvin, for clerk hire...	300 00
Samuel A. McPhetres, City Clerk...	2,000 00
George Gardner, Auditor and Clerk of Common Council.....	2,000 00
John F. McEvoy, City Solicitor...	1,250 00
Joshua N. Marshall, City Solicitor,	250 00
Lorenzo G. Howe, Superintendent of Public Buildings.....	1,600 00
John H. Nichols, Messenger to the City Council.....	1,000 00
Walter H. Leighton, City Physician and Superintendent of Burials,	11 50
Herman J. Smith, City Physician and Superintendent of Burials,	688 50
J. W. Stewart, Inspector of Milk..	4 16
John A. Knowles, Jr., Inspector of Milk.....	18 75
Sylvester Crosby, Pound Keeper...	25 00
	<u> </u>
<i>Amount carried forward,.....</i>	\$13,147 91

<i>Amount brought forward</i> ,.....	\$13,147 91	
Paid to John A. Knowles, Jr., Sealer of		
Weights and Measures.....	300 00	
Caleb M. Marvel, Chairman of the		
Board of Assessors.....	1,000 00	
Francis Goward, Assessor.....	800 00	
James Marren, Assessor.....	800 00	
Isaac A. Fletcher, Assessor.....	800 00	
Levi Hancock, Assessor,.....	800 00	
Board of Assessors, for clerk hire .	600 00	
		<hr/>
Whole expenditure for the year.....	18,247 91	
Balance undrawn January 1, 1874.....	1,486 31	
		<hr/>
		\$19,734 22
		<hr/>

SETTING TREES.

Balance undrawn January 1, 1873.....	\$81 87	
Expenditure		\$81 87
		00 00
Balance undrawn January 1, 1874.....		<u>\$81 87</u>

HEALTH ACCOUNT.

Balance undrawn January 1, 1873.....	\$1,078 77	
	<u> </u>	\$1,078 77

RECEIPTS.

*Received into the Treasury from various sources.....	118 57	
	<u> </u>	118 57
Transferred from the Corporation Tax Account.....	4,000 00	
	<u> </u>	4,000 00
		<u> </u>
		<u>\$5,197 34</u>

EXPENDITURES.

Paid for BATH HOUSES :

To C. W. Saunders & Co., for lumber.....	341 33
Howes & Burnham, for lumber.....	80 40
A. L. Brooks & Co., for lumber.....	3 37
Appropriation for Fire Department, for teaming lumber.....	15 00
Superintendent of Public Buildings' bills for labor.....	150 63
Jonathan Kendall, for oil casks.....	15 39
C. B. Coburn & Co., for oil casks, manila rope, barrels, &c.....	58 24
	<u> </u>
<i>Amount carried forward,.....</i>	<i>\$664 36</i>

* See page 20.

<i>Amount brought forward</i> ,.....	\$664 36	
Paid for BATH HOUSES:		
To H. B. Shattuck, for nails.....	10 00	
Jacob Rogers & Co., for door springs and framing pins	1 20	
French & Puffer, for lanterns, can, oil, globes, &c.....	7 05	
John Mehan, for mirrors.....	3 00	
Michael M. Brady, for teaming lumber..	3 00	
John Biggs, for cash paid for teaming windlass.....	1 75	
James Leach, for teaming lumber.....	1 50	
Alphonso Merrill, for teaming lumber..	75	
Abbie B. Whitney, for services at Centralville Bath House.....	67 00	
Edwin A. Hills, for printing slips.....	1 00	
		760 61
Paid for SUNDRIES:		
To Appropriation for Roads and Bridges, for labor with teams, cleaning alleys, &c	447 40	
William Donovan, for labor removing filth from passage ways, back streets, &c.....	259 00	
Joseph Barrett, for labor removing filth from passage ways, back streets, &c.	253 75	
Jacob Rogers & Co., for wheelbarrow and rake	6 65	
Edwin A. Hills, for printing certificates of vaccination.....	3 50	
Joshua Merrill & Son, for blank book..	40	
G. W. Norris, for horse and wagon....	1 50	
George W. Sanborn, for cash paid out for burying dogs.....	5 00	
Jennie E. Blood, for services as nurse at Small Pox Hospital.....	140 00	
George H. Pillsbury, for medical attendance at Pest House, vaccinating. disinfecting house, &c.....	82 00	
Hermon J. Smith, for vaccinating.....	20 00	
A. W. Buttrick, for consultation in case of small pox.....	3 00	
Walter H. Leighton, for vaccinating...	3 00	
<i>Amounts carried forward</i> ,.....	\$1,225 20	\$760 61

<i>Amounts brought forward,</i>	\$1,225 20	\$760 61
Paid for SUNDRIES :		
To Peter Creighton, for services rendered in small pox cases in the year 1871, (per order of Committee on Claims)	175 09	
	<hr/>	1,400 20
Whole expenditure for the year		2,160 81
Balance undrawn January 1, 1874.		3,036 53
		<hr/>
		\$5,197 34
		<hr/>

STATE AID

FOR DISABLED SOLDIERS AND SAILORS, &c.

Paid to Disabled Soldiers and Sailors and their Families, and for the Families of the Slain, under an Act of the Legislature of the Commonwealth, chapter 172, approved April 23, 1866, (as per resolution of the City Council)		
Due from the Commonwealth, January 1, 1873	\$30,198 70	
	<u> </u>	\$30,198 70

RECEIPTS.

*Received into the Treasury from various sources.....	18,117 33	
	<u> </u>	18,117 33
		<u>\$12,081 37</u>

EXPENDITURES.

To amount paid as per Resolution in 1873,	16,628 62	
	<u> </u>	16,628 62
Due January 1, 1874.....		<u>\$28,709 99</u>

* See page 16.

WATER WORKS.

RECEIPTS.

*By amount received into the Treasury from various sources in 1873.....	\$281,333 59	\$281,333 59
Transferred to Appropriation for City Debt	25,000 00	
Transferred to Corporation Tax Account...	12,000 00	
		<u>37,000 00</u>
		244,333 59
Deduct amount overdrawn January 1, 1873,		12,246 60
		<u>\$232,086 99</u>

EXPENDITURES.

Paid amount of Monthly Drafts.....	260,371 95	
Lowell Institution for Savings, interest, (on two notes).....	15,300 00	
Interest on Lowell Water Loan Coupons,	62,730 00	
Discount on Sale of Lowell Water Loan Bonds.....	5,892 50	
R. D. Wood & Co., for pipe, as per Resolution.....	5,226 02	
Amount of Superintendent of Public Buildings' bills.....	197 40	
Whole expenditure for the year.....		†349,717 87
(Overdrawn January 1, 1874.....		117,630 88
		<u>\$232,086 99</u>

* See pages 17, 18 and 19.

†Expend ed in 1870.....	\$95,057 00
Expend ed in 1871.....	624,151 66
Expend ed in 1872.....	560,708 40
Expend ed in 1873.....	349,717 87

Whole amount expended for Water Works to January 1, 1874.....	1,629,634 93
Less amount credited from various sources.....	87,004 05

Making the net cost of Water Works, to January 1, 1874.....	†\$1,542,630 88
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†For more particular account of expenditures in detail, see First Annual Report of the Lowell Water Board.

CORPORATION TAX.

Balance unappropriated January 1, 1873..	\$12,968 51	
	<u> </u>	\$12,968 51

RECEIPTS.

Received from Commonwealth, for Taxes on Corporation Stocks collected by the State for 1872.....	728 24	
Received from Commonwealth, for Taxes on Corporation Stocks collected by the State for 1873, (in part).....	19,907 30	
Received from Commonwealth, on National Bank Tax.....	3,426 84	
	<u> </u>	24,062 38
Transferred from Appropriation for Water Works.....	12,000 00	
	<u> </u>	12,000 00
		<u> </u>
		\$49,030 89
		<u> </u>

TRANSFER.

Transferred to Appropriation for Health Account.....	4,000 00	
	<u> </u>	4,000 00
Balance unappropriated January 1, 1874..		45,030 89
		<u> </u>
		\$49,030 89
		<u> </u>

CITY DEBT.

Balance undrawn, January 1, 1873.....	\$114 10	
		<u>\$114 10</u>
Transferred from Appropriation for Water Works.	25,000 00	
*Borrowed of Lowell Institution for Savings	30,000 00	
		<u>55,000 00</u>
		55,114 10
Transferred to Appropriation for Roads and Bridges	30,000 00	
		<u>30,000 00</u>
		<u>\$25,114 10</u>

PAYMENTS.

Paid to Trustees of Thomas Nesmith.....	4,624 63	
City Institution for Savings.....	10,500 00	
		<u>15,124 63</u>
Total amount of payments in 1873.....		15,124 63
Balance undrawn January 1, 1874.....		9,989 47
		<u>\$25,114 10</u>

* See page 15.

INTEREST ON CITY DEBT.

Balance undrawn January 1, 1873.....	\$2,508 15	
Appropriated and assessed in 1873.....	30,000 00	
	<u> </u>	\$32,508 15

RECEIPTS.

Received of Appleton National Bank, for interest on daily balances, from August 9, 1872, to January 1, 1873.....	2,316 70	
Received of Appleton National Bank, for interest on daily balances, to July 1, 1873	1,384 22	
Received from Commonwealth, for interest on State Tax, paid before tax was due,	434 02	
	<u> </u>	4,134 94
		<u><u>\$36,643 09</u></u>

PAYMENTS.

Paid to City Institution for Savings.....	12,165 35	
Estate of Thomas Nesmith.....	300 60	
Salem Savings Bank.....	1,625 00	
Lowell Institution for Savings.....	4,980 00	
Mechanics' Savings Bank, (of Lowell)	2,275 00	
Lowell Five Cents Savings Bank.?.	1,100 00	
Boston Five Cents Savings Bank..	6,000 00	
Trustees of the Will of Thomas Nesmith.....	1,500 00	
Trustees of Thomas Nesmith, (High Street Church).....	60 00	
Appleton National Bank, (Temporary Loan).....	1,696 44	
	<u> </u>	
Amount of Interest on ordinary City Debt for 1873.....		31,702 39
Balance undrawn January 1, 1874.....		4,940 70
		<u><u>\$36,643 09</u></u>

INTEREST ON WATER WORKS.

Appropriated and assessed in 1873.....	\$45,000 00	
	<u> </u>	<u>\$45,000 00</u>

TRANSFERS.

Transferred to Appropriation for Schools..	25,000 00	
Transferred to Appropriation for Roads and Bridges	15,000 00	
Transferred to Appropriation for Printing and Advertising.....	500 00	
Transferred to Appropriation for Lighting Streets and Public Buildings	2,000 00	
Transferred to Appropriation for City Li- brary.....	1,000 00	
Transferred to Appropriation for Salaries..	1,500 00	
	<u> </u>	<u>\$45,000 00</u>

INTEREST ON WATER WORKS.

PAYMENTS.

Paid Lowell Institution for Savings, (on notes).....	15,300 00	
On Lowell Water Loan Bonds (cou- pons).....	62,730 00	
	<u> </u>	<u>\$78,030 00</u>

*There remains due, (on coupons) for interest on the Lowell Water Loan Bonds, January 1, 1874, which has not been called for..... \$3,690 00

TAXES.

The amount of Taxes assessed on the Polls, and on the Real and Personal Estate, in the City of Lowell, for the year 1873, was as follows :

VALUATION OF REAL AND PERSONAL PROPERTY.

Of Corporations....	\$15,264,965 00	Tax \$16.90 per \$1,000,	\$257,977 94
Residents	16,887,823 00	“ “ “	285,406 93
Non-Residents..	1,361,890 00	“ “ “	23,016 10
Shares of Stock owned in Banks by residents of Lowell.....	1,743,849 00	“ “ “	29,470 65
	<u>\$35,258,527 00</u>		<u>\$595,871 62</u>

Number of Polls, 10,805, at \$2.00.....	21,610 00
	<u>617,481 62</u>
Add Bank Tax on Non-Residents assessed, and which were not added to the valuation of the City.....	22,140 92
Total amount of Taxes assessed in 1873.....	<u><u>\$639,622 54</u></u>

Of this amount \$43,402,50 went to pay the City's proportion of the State Tax.

The City's proportion of the State Tax for 1873, was....	\$13,402 50
The City's proportion of the State Tax for 1872, was....	38,580 00
Increase over 1872.....	<u><u>\$4,822 50</u></u>

The City's Proportion of the County Tax for 1873, was...	\$24,726 24
The City's Proportion of the County Tax for 1872, was...	22,371 35
	<hr/>
Increase over 1872.....	\$2,354 89

The number of polls in 1873, was.....	10,805
The number of polls in 1872, was.....	10,380
	<hr/>
Increase over 1872.....	425

Amount of Taxes assessed in 1873.....	\$639,622 54
Amount of Taxes collected of the assessment of 1873, was.....	\$604,625 55
*Amount of Taxes abated on the assessment of 1873, by the Assessors, prior to Jan- uary 1, 1874, before collection, as per their Report, was.....	1,070 44
	<hr/>
	605,695 99

Leaving the amount of Taxes uncollected (assessed in 1873), due January 1, 1874.....	\$33,926 55
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APPROPRIATED AND ASSESSED IN 1873:

For the ordinary expenses of the City.....	\$538,500 00
For State Tax.....	43,402 50
For County Tax.....	24,726 24
For Overlays (or apportionment).....	10,852 88
For Bank Tax on Non-Residents, assessed, and which were not added to the valuation of the City.....	22,140 92
	<hr/>
Total amount of Taxes on Property and Polls.....	639,622 54

Amount of Taxes uncollected (assessed in 1870) due Jan- uary 1, 1873.....	\$3,522 91
Amount collected in 1873 of the Taxes of 1870.....	4 00
Amount of Taxes abated on the assessment of 1870, by the Assessors, prior to Jan- uary 1, 1874, before collection, as per their report, was.....	3,518 91
	<hr/>
	\$3,522 91

*For abatements made after collection and Taxes refunded, see Reserved Fund.

Amount of Taxes uncollected (assessed in 1871) due January 1, 1873.....		\$4,034 17
Amount collected in 1873 of the Taxes of 1871	6 00	
Amount of Taxes abated on the assessment of 1871, by the Assessors, prior to January 1, 1874, before collection, as per their report, was.	4,028 17	
	<hr/>	\$4,034 17
		<hr/>

Amount of Taxes uncollected (assessed in 1872) due January 1, 1873.....		\$7,472 69
Amount collected in 1873 of the Taxes of 1872.....	3,017 51	
	<hr/>	\$3,017 51
		<hr/>

Amount of Taxes uncollected (assessed in 1872) due January 1, 1874.....		\$4,455 18
		<hr/>
		<hr/>

SINKING FUND
FOR REDUCTION OF THE WATER DEBT.

Appropriated and assessed in 1873.....	\$25,000 00	
	<hr/>	<u>\$25,000.00</u>
Invested at interest.....	\$25,000 00	
	<hr/>	<u>\$25,000 00</u>

TEMPORARY LOAN.

Borrowed of the Appleton National Bank..	\$191,088 00	
	<u> </u>	\$191,088 00
		<u> </u>

PAYMENT.

Paid to Appleton National Bank.....	\$191,088 00	
	<u> </u>	\$191,088 00
		<u> </u>

CARNEY MEDAL FUND.

*Received of James G. Carney, Esq., in 1858 and 1859, the amount of two hundred dollars, which is to remain a perpetual debt of the City forever ; the interest to be applied in payment for the "Carney Medals," to the departments of the High School, (annually).....			\$200 00	
			<u>200 00</u>	
Undrawn January 1, 1874.....				<u>\$200 00</u>

*One Hundred dollars was donated August 24, 1858, and accepted by the City Council September 14, 1858, and One Hundred dollars additional, July 15, 1859, and accepted July 26, 1859. For the information of the citizens of Lowell, the Auditor respectfully refers them to the "Annual Report of the School Committee," for the year 1859, where all the correspondence between the donor and the recipient may be found.

NOTES DUE FROM THE CITY,

December 31, 1873.

DATE OF NOTES.	TO WHOM PAYABLE.	AMOUNT.	PER CENT.	INTEREST, WHEN DUE.	ANNUAL INTEREST.	INSTALLMENTS, WHEN DUE.	AMOUNT OF INSTALLMENTS.
1852, Sept. 1,	Lowell Inst'n for Savings,	\$30,000 00	5	Sep. 1 and Mar. 1,) each year,	\$1,500 00	1882, Sept. 1,	\$30,000 00
1857, Feb. 21,	City Institu'n for Savings,	10,500 00	5 5-6	Feb. 21, each year,	612 50	Nov. 1, 1875,	10,500 00
1862, Sept. 13,	Lowell Five Cents Savings Bank,	10,000 00	5½	Semi-annually,	550 00	Sept. 13, 1877,	10,000 00
1862, Sept. 13,	Lowell Five Cents Savings Bank,	10,000 90	5½	Semi-annually,	550 00	Sept. 13, 1882,	10,000 00
1862, Nov. 3,	City Institu'n for Savings,	30,000 00	5½	Nov. 3 and May 3,	1,650 00	1887, Nov. 3,	30,000 00
1864, April 1,	City Institu'n for Savings,	38,000 00	5¼	Oct. 1, and Apr. 1,	1,995 00	1884, April 1,	38,000 00
1864, Aug. 9,	Boston Five Cents Savings Bank,	50,000 00	6	Mar. 16 and Sep. 16,	3,000 00	1874, August 9,	50,000 00
1864, Aug. 13,	Boston Five Cents Savings Bank,	50,000 00	6	Mar. 16 and Sep. 16,	3,000 00	1874, August 13,	50,000 00
1865, Jan. 13,	City Institu'n for Savings,	50,000 00	6	Semi-annually,	3,000 00	1880, January 13,	50,000 00
1865, March 22,	Lowell Inst'n for Savings,	37,000 00	6	Semi-annually,	2,220 00	1880, March 22,	37,000 00
1869, June 1,	Lowell Inst'n for Savings,	21,000 00	6	Semi-annually,	1,260 00	1879, June 1,	21,000 00

1870, March 1,	Mechanics' Savings Bank,	17,500 00	6½	Semi-annually,	1,137 50*	1876, October 1,	17,500 00
1870, March 1,	Mechanics' Savings Bank,	17,500 00	6½	Semi-annually,	1,137 50	1878, October 1,	17,500 00
1870, April 1,	City Institu'n for Savings,	20,000 00	6 ⁴⁵ / ₁₀₀	Semi-annually,	1,290 00	1881, October 1,	20,000 00
1870, June 1,	City Institu'n for Savings,	20,000 00	6 ⁴⁵ / ₁₀₀	Semi-annually,	1,290 00	1883, October 1,	20,000 00
1870, Aug. 1,	City Institu'n for Savings,	20,000 00	6 ⁴⁵ / ₁₀₀	Semi-annually,	1,290 00	1885, October 1,	20,000 00
*1871, March 6,	Bequest of Thomas Nesmith,	25,000 00	6	Semi-annually,	1,500 00	Perpetual Debt,	25,000 00
†1871, April 10,	Bequest of Thomas Nesmith,	1,000 00	6	Semi-annually,	60 00	Perpetual Debt,	1,000 00
1872, Aug. 5,	Salem Savings Bank,	25,000 00	6½	Semi-annually,	1,625 00	1882, August 5,	25,000 00
1873, Oct. 17,	Lowell Inst'n for Savings,	30,000 00	7	Semi-annually,	2,100 00	1883, October 17,	30,000 00
	Amount of City Debt, (ordinary,)	512,500 00		Interest on ordinary City Debt,	30,767 50		512,500 00
	Amount of Water Loans,	1,425,000 00		Amount of interest on Water Loans,	86,100 00	Amount of Water Loans,	1,425,000 00
	Total amount of City debt,	\$1,937,500 00		Total amount of interest on City Debt,	\$116,867 50		\$1,937,500 00

*Interest on the same, (for the poor).

†Interest on the same (High Street Church).

DUE FROM THE CITY ON WATER LOANS

December 31, 1873.

DATE OF NOTES AND BONDS.	TO WHOM PAYABLE.	AMOUNT.	PER CENT.		INTEREST, WHEN DUE.	ANNUAL INTEREST.	INSTALLMENTS, WHEN DUE.	AMOUNT OF INSTALLMENTS.
1870, Nov. 1,	Merchants Nat'l Bank,	\$200,000 00	6	Bonds,	Semi-annually,	\$12,000 00	1890, Nov. 1,	\$200,000 00
1871, May 1,	Lowell Inst. for Savings,	200,000 00	6	City's Note,	Semi-annually,	12,000 00	1891, May 1,	200,000 00
1870, Nov. 1,	Railroad Nat'l Bank,	150,000 00	6	Bonds,	Semi-annually,	9,000 00	1890, Nov. 1.	150,000 00
1870, Nov. 1,	Mechanics' Savings B'k,	50,000 00	6	Bonds,	Semi-annually,	3,000 00	1890, Nov. 1,	50,000 00
1870, Nov. 1,	City Inst. for Savings,	100,000 00	6	Bonds,	Semi-annually,	6,000 00	1890, Nov. 1,	100,000 00
1870, Nov. 1,	Merchants Nat'l Bank,	100,000 00	6	Bonds,	Semi-annually,	6,000 00	1890, Nov. 1,	100,000 00
1870, Nov. 1,	Brewster, Sweet & Co.,	50,000 00	6	Bonds,	Semi-annually,	3,000 00	1890, Nov. 1,	50,000 00
1870, Nov. 1,	Brewster, Sweet & Co.,	50,000 00	6	Bonds,	Semi-annually,	3,000 00	1890, Nov. 1,	50,000 00
1870, Nov. 1,	Merchants Nat'l Bank,	100,000 00	6	Bonds,	Semi-annually,	6,000 00	1890, Nov. 1,	100,000 00
1870, Nov. 1,	Merchants Nat'l Bank,	100,000 00	6	Bonds,	Semi-annually,	6,000 00	1890, Nov. 1.	100,000 00
1870, Nov. 1,	Worcester County Insti- tution for Savings,	30,000 00	6	Bonds,	Semi-annually,	1,800 00	1890, Nov. 1,	30,000 00
1870, Nov. 1,	William Shepard,	3,000 00	6	Bonds,	Semi-annually,	180 00	1890, Nov. 1,	3,000 00
1870, Nov. 1,	Lowell Five Cents Sav- ings Bank,	30,000 00	6	Bonds,	Semi-annually,	1,800 00	1890, Nov. 1,	30,000 00

1870, Nov. 1,	William Shepard,	15,000 00	6	Bonds,	Semi-annually,	900 00	1890, Nov. 1,	15,000 00
1870, Nov. 1,	E. G. Woodman,	2,000 00	6	Bonds,	Semi-annually,	120 00	1890, Nov. 1,	2,000 00
1870, Nov. 1,	William Shepard,	20,000 00	6	Bonds,	Semi-annually,	1,200 00	1890, Nov. 1,	20,000 00
1870, Nov. 1,	Marlborough Savings Bank, Marlborough,	10,000 00	6	Bonds,	Semi-annually,	600 00	1890, Nov. 1,	10,000 00
1870, Nov. 1,	R. L. Day & Cobb,	5,000 00	6	Bonds,	Semi-annually,	300 00	1890, Nov. 1,	5,000 00
1870, Nov. 1,	William Shepard,	25,000 00	6	Bonds,	Semi-annually,	1,500 00	1890, Nov. 1,	25,000 00
1870, Nov. 1,	Brewster, Sweet & Co.,	25,000 00	6	Bonds,	Semi-annually,	1,500 00	1890, Nov. 1,	25,000 00
1870, Nov. 1,	William Shepard,	1,000 00	6	Bond,	Semi-annually,	60 00	1890, Nov. 1,	1,000 00
1870, Nov. 1,	Brewster, Sweet & Co.,	10,000 00	6	Bonds,	Semi-annually,	600 00	1890, Nov. 1,	10,000 00
1870, Nov. 1,	Lowell Five Cents Sav- ings Bank,	16,000 00	6	Bonds,	Semi-annually,	960 00	1890, Nov. 1,	16,000 00
1870, Nov. 1,	John F. Kimball,	1,000 00	6	Bond,	Semi-annually,	60 00	1890, Nov. 1,	1,000 00
1870, Nov. 1,	William Shepard,	3,000 00	6	Bonds,	Semi-annually,	180 00	1890, Nov. 1,	3,000 00
1873, June 14,	Lowell Inst. for Sav'gs,	100,000 00	6 6-10	City's Note,	Semi-annually,	6,600 00	1893, June 14,	100,000 00
1870, Nov. 1,	Brewster, Sweet & Co.,	25,000 00	6	Bonds,	Semi-annually,	1,500 00	1890, Nov. 1,	25,000 00
1870, Nov. 1,	Lowell Water Loan Sinking Fund,	3,000 00	6	Bonds,	Semi-annually,	180 00	1890, Nov. 1,	3,000 00
1870, Nov. 1,	Lucian H. Reed,	1,000 00	6	Bond,	Semi-annually,	60 00	1890, Nov. 1,	1,000 00
Am't of Water Debt,		\$1,425,000 00		Int. on Water D't		\$86,100 00		\$1,425,000 00

TABLE OF APPROPRIATIONS FOR 1873,

INCLUDING THE BALANCES UNDRAWN AT THE COMMENCEMENT OF THE
YEAR ; ALSO THE EXPENDITURES FOR 1873, AND THE
BALANCES UNDRAWN JANUARY 1, 1874.

	APPROPRIATIONS.	EXPENDITURES.	BALANCES.
Schools.....	\$144,520 64	\$133,440 68	\$11,079 96
School-Houses.....	43,349 98	42,661 51	688 47
Roads and Bridges.....	171,895 54	144,257 05	27,638 49
Reserved Fund.....	16,316 77	16,098 21	218 56
*State Aid for Disabled Sol- diers and Sailors and their Families, and for the Fam- ilies of the slain.....			
Paupers.....	27,805 24	23,069 60	4,735 64
Police.....	52,602 36	45,072 50	7,529 86
Fire Department.....	41,513 47	37,309 91	4,203 56
Sewers and Drains.....	81,437 95	65,575 66	15,862 29
Commons.....	9,004 77	6,914 75	2,090 02
Printing and Advertising....	3,416 08	3,012 30	403 78
Lighting Streets and Pubic Buildings.....	21,806 54	18,350 92	3,455 62
Repairs of Public Buildings..	7,935 39	5,325 55	2,609 84
City Library.....	5,773 50	5,246 10	527 40
Salaries.....	19,734 22	18,247 91	1,486 31
Setting Trees.....	81 87		81 87
City Debt....	25,114 10	15,124 63	9,989 47
Interest on City Debt.....	36,643 09	31,702 39	4,940 70
Carney Medal Fund.....	200 00		200 00
Corporation Tax.....			45,030 89
Water Works.....	232,086 99	349,717 87	†117,630 88
Health Account.....	5,197 34	2,160 81	3,036 53
National Bank Tax.....		22,200 58	

* Unsettled account with the Commonwealth.

† Overdrawn.

DEBTS DUE THE CITY,

January 1, 1874.

For Taxes of 1872.....	\$4,455 18	
Taxes of 1873.....	33,926 55	
		<u>\$38,381,73</u>
Sidewalk Assessments.....	6,934 01	
Sewer Assessments.....	16,496 38	
Note of Hanover Dickey, secured by mortgage.....	300 00	
Execution against Horace Howard....	48 21	
Rent of Stores, City Government Build- ing.....	960 00	
Rent of Store and Cellar in Market House Building.....	300 00	
Sundry persons, book account.....	825 89	
		<u>25,864 49</u>
From Commonwealth, State aid of 1873...	16,628 62	
Rent of Armories.....	1,200 00	
Burial of State Paupers.....	430 00	
		<u>18,258 62</u>
		<u>\$82,504 84</u>

REAL ESTATE OWNED BY THE CITY.

City Government Building.....	\$25,000 00
Huntington and Jackson Halls.....	35,000 00
Common, south of City Government Building.....	1,100 00
South Common.....	23,300 00
North Common.....	18,300 00
Belvidere Park.....	2,300 00
Market House.....	47,000 00
City Scales, rear of Market House.....	1,000 00
Almshouse and Farm.....	25,000 00
High School-house, of brick, on Anne and Kirk Streets..	43,000 00
North and South Grammar School-houses, of brick.....	23,000 00
Grammar School-house, of brick, in Belvidere.....	11,000 00
Grammar School-house, of brick, corner Middlesex and Branch Streets.....	11,300 00
Grammar School-house, of brick, on Lawrence Street.....	21,000 00
Grammar School-house, of brick, on Lewis Street.....	12,500 00
Grammar School-house, of brick, in Centralville.....	17,000 00
Grammar School-house, of brick, on Merrimack Street...	105,800 00
Sherman School-house, Powell Street	7,000 00
Primary School-house and Ward Room, of brick, corner of Merrimack and Race Streets.....	3,400 00
Primary School-house and Ward Room, of brick, on Church Street.....	4,600 00
Primary School-house of brick, on Middlesex Street, near Hamilton Corporation, for four Schools.....	6,000 00
Primary School-house, of wood, School Street.....	600 00
Primary School-house, of wood, High Street, two Schools.	3,600 00
Primary School-house, of wood, Grand Street.....	700 00
Primary School-house, of brick, Paige Street.....	2,300 00
Primary School-house lot, Worthen Street.....	800 00
Primary School-House, of wood, Carter Street.....	4,000 00
Primary School-house, of wood, Charles Street.....	1,600 00
Primary School-house, of wood, Fayette Street.....	5,500 00
Primary School-house, of wood, for two Schools, Cabot Street.....	2,600 00
<i>Amount carried forward,.....</i>	<u>\$465,300 00</u>

<i>Amount brought forward</i> ,.....	\$465,300 00
Primary School-house, of wood, Rock Street.....	2,100 00
Primary School-house, of wood, Salem Street, near Common Avenue.....	1,500 00
Primary School-house, of wood, for three Schools, Adams Street.....	3,500 00
Primary School-house, of wood, for two Schools, on the corner of Adams and Cross Streets.....	3,600 00
Primary School-house, West Sixth Street.....	7,000 00
Primary School-house, of wood, Fourth Street.....	2,500 00
Primary School-house, of wood, on Ames and Lawrence Streets.....	7,700 00
Primary School-house, of wood, on Chapel Street.....	5,400 00
Primary School-houses, of wood, on Central and Chapel Streets.....	9,000 00
Primary School-house, of brick, on Howard Street.....	4,000 00
Primary School-house, on High Street.....	15,000 00
Primary School-house, of brick, for four Schools, Worthen Street.....	26,000 00
Hose Carriage House, and Ward Room, on Fayette Street	3,100 00
Hook and Ladder House, of brick, on Middle Street....	3,000 00
Double Engine House and Stable, of brick, on Middle Street.....	10,250 00
Engine House and Stable, of brick, on Middlesex Street..	6,550 00
Engine House, of wood, at Ayer's City.....	500 00
Hose Carriage House, of wood, on Central Street.....	1,700 00
Engine and Hose House, of brick, on Warren street.....	1,800 00
Ward Room and Carpenter's Shop, of brick, on Middle Street.....	3,000 00
Gun House and Ward Room, of wood, on South Street...	1,200 00
Lot of Land on School Street, 280 $\frac{38}{100}$ feet.....	16 82
Lot of Land on the corner of Willie and Fletcher Streets, for Hose House and Ward Room.....	2,500 00
Stable and Land on Western Avenue.....	6,000 00
Three acres of Land near the Pound.....	575 00
One and a third acres of Land, near Chelmsford road....	150 00
Public Landing, rear Market House, exclusive of the Landing set off by the Locks and Canals.....	1,250 00
Lot of Land, gravel lot, in Centralville.....	190 00
Lot of Land and Stone Ledge, purchased in 1866, on the east side of Fletcher Street.....	1,956 68
Lot of Land and Stone Ledge, purchased in 1868, on the south side of Whiting Street.....	2,200 00
Two Lots of Land, with buildings, on Broadway, La Grange, Fletcher and Cross Streets, purchased in 1869.....	25,000 00
<i>Amount carried forward</i> ,.....	\$623,538 50

<i>Amount brought forward</i> ,.....	\$623,538 50
Lot of Land on the corner of Fletcher and Whiting Streets, purchased in 1869.....	2,133 99
Pest House, on City Farm.....	2,500 00
House of Chaplain, on City Farm.....	2,500 00
Lot of Land and Buildings thereon, corner of Kirk and Lee Streets, for School purposes.....	16,000 00
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	\$646,672 49

WATER WORKS.

The Real Estate and Personal Property belonging to the
City, occupied and used by the Water Works, the
net cost of which is to January 1, 1874.....\$1,542,630 88

PERSONAL PROPERTY OWNED BY THE CITY.

LIST OF PERSONAL PROPERTY IN THE
CARE OF JOHN C. WOODWARD,
SUPERINTENDENT OF STREETS,
JANUARY 1, 1874:

1 Stone Crusher and Engine.....	\$1,500 00
48 Cords hard wood at the Yard.....	432 00
168 Cords pine wood at the Yard.....	1,176 00
215 Tons of Coal at the Yard.....	2,042 50
500 Lbs. of Straw.....	8 00
10½ Tons of Hay.....	315 00
11 Bags of Meal.....	20 35
30 Bushels of Oats.....	21 00
3 Tons of Carrots.....	51 00
2 New Dump Sleds.....	160 00
11 Other Sleds.....	550 00
23 Horses.....	6,900 00
10 Sets Double Harnesses.....	400 00
5 Sets Single Harnesses.....	100 00
5 Lead Harnesses.....	50 00
4 Single Harnesses.....	80 00
3 Wagons.....	170 00
1 Sleigh.....	60 00
15 Carts.....	1,250 00
4 Wood Wagons.....	320 00
1 Watering Cart.....	120 00
30 Lanterns.....	30 00
1005 feet Chestnut Plank.....	35 16
3,500 feet Oak Plank.....	157 50
80 Shovels.....	80 00
36 Snow Shovels.....	36 00
16 Hoes.....	16 00
7 Rakes.....	10 00
20 Picks.....	30 00
16 Pick Handles.....	4 80

<i>Amount carried forward,.....</i>	\$16,125 31
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<i>Amount brought forward,.....</i>	\$16,125 31
10 Cast Steel Drills.....	40 00
22 Crow Bars.....	49 50
1 Churn Drill.....	10 00
5 Striking Hammers.....	10 00
6 Paving Hammers.....	6 00
5 Stone Hammers.....	14 50
5 Axes.....	6 25
1 Adze.....	2 00
15 Hand Drills.....	6 00
5 Stone Cutter's Points.....	2 00
4 Large Stone Cutter's Points.....	11 20
6 Paving Mauls.....	9 00
1 Hand Hammer.....	1 25
11 Pails.....	4 00
8 Feed Baskets.....	4 00
2 Ploughs.....	24 00
9 Hay Rakes.....	4 50
9 Hay Forks.....	9 00
2 Seythes.....	4 00
25 Curry Combs and Brushes.....	75 00
2 Stone Truck Drags.....	150 00
6 Draft Chains.....	12 00
31 Horse Collars.....	93 00
25 Halters.....	50 00
25 Blankets and Surcingles.....	75 00
14 Wheelbarrows.....	100 00
44 Stake Chains.....	22 00
2 Buffalo Robes.....	24 00
1 Platform Scale.....	12 00
1 Hay Cutter.....	10 00
1 Stone Roller.....	120 00
1 Grindstone.....	10 00
1 Saw Frame, Arbor and 2 Saws.....	50 00
Blacksmith Tools and Stock on hand.....	600 00
4 Stoves.....	40 00
Bed and Bedding.....	65 00
1 Stone Drag.....	10 00
2 Well Jacks.....	90 00
1 Coal Screen.....	15 00
1 Sand Screen.....	10 00
196 feet of Flagging.....	78 40
14,000 Brick.....	175 00
1 Copper Pump.....	12 00
6,928 Small Paving Blocks.....	554 20
800 feet Edgestone.....	360 00
3 Manhole Covers.....	66 00
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<i>Amount carried forward,.....</i>	\$19,221 11

<i>Amount brought forward,.....</i>	\$19,221 11	
3 Cesspool Grates.....	48 00	
1 Cesspool Trap and Grate.....	25 00	
	<hr/>	\$19,294 11

LIST OF PERSONAL PROPERTY IN THE
CARE OF LORENZO PHELPS, SU-
PERINTENDENT OF ALMSHOUSE
AND FARM, JANUARY 1, 1874:

1 Pair Matched Team Horses.....	\$650 00
1 Bay Horse.....	200 00
1 Black Horse.....	125 00
1 Gray Horse.....	125 00
6 Milch Cows.....	360 00
1 Heifer Calf.....	20 00
15 Shotes.....	180 00
18 Hens.	15 00
2 Roosters.....	2 00
24 Chickens.....	12 00
30 Tons English Hay.....	810 00
18 Tons Meadow Hay.....	270 00
3 Tons Oat Fodder.....	60 00
25 Bushels Onions.....	14 00
45 Tons Coal.	357 75
50 Cords Wood.....	300 00
800 Bushels Potatoes.....	520 00
108 Bushels Turnip Beets.....	54 00
90 Bushels Corn.....	33 75
10 Bushels Rye.....	10 00
1 Corn Sheller.....	5 00
1½ Bushels Grass Seed.....	8 75
30 Bushels Beans.....	75 00
2 Grindstones.....	6 00
3,820 lbs. Pork, Lard, Hams, &c.....	382 00
Tools and Stock in Carpenter Shop.....	50 00
A Lot of Groceries.....	608 72
Tools and Stock in Blacksmith Shop.....	100 00
1 Two-Horse Wagon.....	125 00
1 Two-Horse Dump Cart.....	125 00
1 Hay Rack.....	25 00
1 One-Horse Dump Cart.....	75 00
1 Two-Horse Wagon.....	30 00
1 One-Horse Wagon.....	75 00
1 One-Horse Hay Wagon.....	35 00
1 Night soil cart.....	175 00
1 Hay Rack.....	25 00
<i>Amount carried forward,.....</i>	<hr/> \$6,046 97

<i>Amount brought forward,.....</i>	<i>\$6,046 97</i>	
2 Two-Horse Sleds.....	150 00	
1 Ox Sled.....	20 00	
1 One-Horse Sled.....	15 00	
1 Steer Sled.....	15 00	
2 Covered Market Wagons.....	300 00	
1 Old Sleigh.....	15 00	
1 Large Sleigh.....	50 00	
1 Carryall.....	125 00	
1 Carriage Harness.....	50 00	
1 Pair Double Harnesses.....	60 00	
1 Pair Double Chain Harnesses.....	30 00	
1 Lap Robe.....	1 00	
3 Single Harnesses.....	25 00	
1 Cart Harness.....	10 00	
Hay Caps.....	5 00	
1 Horse Rake.....	20 00	
1 Mowing Machine.....	85 00	
1 Hay Tedder.....	67 00	
4 Yokes and Swill Box.....	11 00	
A Lot of Posts.....	35 00	
7 Plows.....	84 00	
Seed Sower.....	6 00	
6 Picks.....	6 00	
Hoes, Iron Bars, Shovels, Rakes, and Chains	158 75	
2 Cultivators.....	16 00	
3 Harrows.....	30 00	
1 Fan Mill.....	6 00	
75 Hot Bed Sashes.....	140 00	
30 Old Sashes.....	22 50	
Curry Combs, Brushes, &c.....	8 00	
300 galls. Cider.....	90 00	
18 Cider Barrels.....	18 00	
240 Bushels Sugar Beets.....	60 00	
300 Bushels Rutabaga Turnips.....	150 00	
100 Bushel Turnips.....	20 00	
1 Ton Carrots.....	17 00	
6 Wheelbarrows.....	6 00	
41 Coffins.....	143 00	
300 Gallons Vinegar and 9 Casks.....	166 00	
1 Hand Engine and 200 feet Hose	200 00	
A Lot of Bedding and Furniture at Pest House.....	401 10	
A Lot of Clothing, Bedding, Furniture, and other articles.....	4,419 95	
		<hr/>
		\$13,304 27

LIST OF PERSONAL PROPERTY IN THE
CARE OF LORENZO G. HOWE, SU-
PERINTENDENT OF PUBLIC BUILD-
INGS, AT THE CITY'S SHOP, JANU-
ARY 1, 1874:

2,500 feet Canada Boards and Plank.....	\$125 00
200 feet Sheathing.....	10 00
200 feet Strips and Casing.....	12 00
250 feet D. M. Boards.....	6 25
410 feet Whitewood Boards.....	20 50
600 feet Birch Boards.....	24 00
300 feet Ladder Sides.....	7 00
100 feet Mouldings.....	4 00
200 feet Old Plank.....	3 00
30 feet Black Walnut Boards.....	3 60
6 Old Windows.....	7 00
1,050 feet Old Joist and Timber.....	12 00
200 Fence Picks.....	14 00
210 Pedestals.....	105 00
250 Desk Irons.....	125 00
1 Second-hand Closet.....	7 00
183 Boxes Crayons.....	27 43
30 Boxes Assorted Crayons.....	37 50
13 Brooms.....	4 29
7 Wash Basins.....	3 50
4 Copper Ink Fillers.....	2 50
2 Dust Pans.....	1 00
22 Floor Mats.....	44 00
3 Hand Brushes.....	1 01
14 Yards Enameled Cloth.....	9 80
5½ Yards Carpeting.....	13 75
4 New Arm Chairs.....	8 00
115 New Chairs at Ward Room No. 6.....	57 50
15 New Chairs at Primitive Methodist Ves- try.....	7 50
285 Hard Wood Chairs at Green School (Evening School).....	285 00
85 Pine Wood Chairs at Green School (Evening School).....	42 50
100 Hard Wood Stools at Green School (Drawing School).....	105 00
300 feet Rubber Hose.....	60 00
4 Common Chairs.....	4 00
240 New Grammar School Chairs.....	180 00
183 Old Primary School Chairs.....	80 00
2 Settees.....	12 00

Amount carried forward,..... \$1,471 63

<i>Amount brought forward,.....</i>	\$1,471 63	
110 Old Primary School Desks.....	82 50	
200 New Grammar School Desks.....	500 00	
5 Door Springs.....	2 50	
80 Tables for Evening and Drawing Schools (Green School).....	280 00	
40 Stools at Green School.....	40 00	
4 Tables at Howard Chapel.....	14 00	
14 Tables at Primitive Methodist Vestry..	49 00	
10 Tables at Ward Room No. 3.....	35 00	
10 Boxes Glass.....	35 00	
120 Small Butts.....	4 80	
7 lbs. Trunk Nails.....	1 05	
2 Casks Nails.....	11 00	
8 Papers 4 oz. Tacks.....	80	
3 Gross Screws.....	1 40	
14 Door Knobs.....	1 96	
12 Padlocks.....	6 00	
12 Sash Fastenings.....	1 80	
22 Barrel Bolts.....	3 50	
12 Door Handles.....	2 00	
15 Cupboard Catches.....	2 50	
23 Large Coffins.....	105 50	
35 Small Coffins.....	105 00	
4 Gross Screw Eyes.....	4 00	
67 Erasers.....	13 40	
5 Gallons Varnish.....	7 50	
6 Gallons Oil.....	5 40	
50 lbs. Mineral Paint.....	1 50	
		\$2,788 74

AMOUNT OF TOOLS IN CHARGE OF SUPERINTENDENT OF PUBLIC BUILDINGS, JANUARY 1, 1874:

2 Picks.....	\$2 75	
12 Shovels.....	6 00	
1 Iron Bar.....	2 50	
9 Wheelbarrows.....	18 00	
1 Shingle Ripper.....	1 50	
1 Jack Screw.....	5 00	
10 Paint Pots.....	2 00	
12 Oil Cans.....	3 75	
12 Paint Brushes.....	4 00	
1 Grindstone.....	7 00	
1 Pair Steelyards.....	1 50	
<i>Amount carried forward,.....</i>	\$54 00	

<i>Amount brought forward,</i>	\$54 00	
3 Augers.	4 00	
3 Door Sets.	3 00	
11 Ladders.	28 00	
3 Pairs Steps.	6 00	
4 Hand Screws.	3 50	
6 Wood Saws.	6 00	
3 Pump Hooks.	1 50	
8 Axes.	7 00	
5 Pairs Piper's Tongs.	13 00	
	<hr/>	\$126 00

LIST OF PERSONAL PROPERTY IN THE
CARE OF GEORGE HOBSON, SUPER-
INTENDENT OF STREET LAMPS,
JANUARY 1, 1874:

525 Gas and 33 Fluid Lamps.	\$13,356 00	
2 Horses.	300 00	
2 Harnesses.	50 00	
2 Sleighs.	50 00	
1 Lighting Sleigh	125 00	
1 Lighting Wagon.	100 00	
1 Wagon.	40 00	
4 Blankets and Oil Cover.	12 00	
1 Cushion.	5 00	
16 Ladders, at \$1.00.	16 00	
2 Fluid Lanterns.	10 00	
8 Gas Lanterns, at \$6 00.	48 00	
50 Fluid Lamps, at 30 cts.	15 00	
2 Diamonds, at \$3 00.	6 00	
1 Large Fluid Can.	10 00	
6 Fluid Cans.	8 00	
2 Pairs Nippers, 1 Pair Pliers, 1 Wrench,	5 00	
2 Pairs Tongs.	6 00	
1 Air Pump and Connections.	35 00	
2 Fluid Boxes.	10 00	
50 Lamp Post Cocks, at 50 cts.	25 00	
8 Lamp Post Arms, at \$1.00.	8 00	
1 Stove.	5 00	
1 Bit and Bitstock.	3 00	
50 bbls. Cotton Waste.	7 50	
6 Globes, at \$1.25.	7 50	
40 galls Alcohol, at \$1.90.	76 00	
5 Wooden Posts, at \$2.00.	10 00	
1 Gross Matches.	2 00	
1 Building.	75 00	
	<hr/>	\$14,426 00

LIST OF PERSONAL PROPERTY UNDER
THE CHARGE OF CHARLES P.
BOWLES, CITY MARSHAL, AT PO-
LICE STATION AND POLICE COURT
ROOM, JANUARY 1, 1874:

24 Chairs.....	\$24 00
6 Arm Chairs.....	10 00
7 Desks.....	90 00
3 Tables.....	18 00
2 Clocks.....	36 00
2 Slates.....	40
Stoves, Pipe and Pot.....	100 00
Beds and Bedding.....	125 00
2 Mirrors.....	7 00
18 Pails and Buckets.....	18 00
1 Seal of Police Court.....	12 00
1 Sofa.....	11 00
2 Fire Proof Safes.....	60 00
Carpeting.....	15 00
50 Silver Badges.....	100 00
36 Wreath Badges.....	12 00
3 Pairs Handcuffs.....	3 00
96 Police Clubs.....	46 00
32 Police Rattles.....	32 00
36 Police Belts.....	54 00
Window Curtains and Fixtures.....	30 00
18 Spittoons.....	4 50
6 Inkstands.....	1 50
2 Iron Rakes.....	50
1 Coal Sifter.....	50
2 Shovels.....	2 00
10 Tin Dippers.....	50
4 Sets Police Buttons.....	100 00
1 Set of Dies for Coat and Vest Buttons...	30 00
40 Tons of Coal.....	320 00

\$1,262 90

Furniture in Government Building, Hun- tington Hall, and Jackson Hall.....	\$8,000 00
Furniture in School-houses, not included in the Real Estate.....	10,000 00
Furniture in Ward Rooms.....	50 00
Flag Staffs.....	700 00
Cast Steel Bell on Market House Building (so-called).....	900 00
Bell on High Street Church Tower.....	500 00

Amount carried forward,..... \$20,150 00

<i>Amount brought forward,.....</i>	\$20,150 00	
Furniture in Armories and Drill Room....	375 00	
Bell on Varnum School-house.....	1,000 00	
In care of the Chief Engineer of the Fire Department (Personal Property).....	40,000 00	
In care of the Chief Engineer of the Fire Department, (Fire Alarm Telegraph).	16,700 00	
	<hr/>	\$78,225 00

COMMON SEWERS AND RESERVOIRS

BUILT BY THE CITY, AND COST OF THE SAME.

From the Merrimaek Canal through Market Street to Concord River	\$6,708 19
From the Merrimaek Canal, westerly, and from the West- ern Canal, easterly, through Lowell Street, crossing under Merrimaek Street, through Tilden Street, to the Merrimaek River.....	13,800 00
On Central Street, from Charles Street to Union Street...	231 31
On Alder and Bartlett Streets, from Livermore Street to Merrimaek River.....	714 50
On Merrimaek Street, from Cabot Street, westerly to the west side of Austin Street, also from Race Street to Suffolk Street.....	635 58
On Race Street, from the northerly side of the Northern Canal to Merrimaek Street.....	865 87
On Moody Street, from Race Street, westerly to the west side of Austin Street.....	855 36
On Dodge Street, from Race Street to Suffolk Street....	184 68
On Cabot Street, from a point near Northern Canal, south- erly to Salem Street.....	539 95
On Middlesex Street, from Pearl Street, westerly 200 feet,	485 22
On Church and Lawrence Streets, from Concord River to George Street, and from Church to Tyler Street....	1,247 31
From south side of City Hall, back of Merrimaek Street, to Unitarian Church, to Middle Street, through Cen- tral Street, entering the sewer at the corner of Cen- tral and Market Streets.	1,112 00
Through Middle Street, from Central to Merrimaek Canal,	1,498 92
From Garnet Street to Concord River, near Warren Street	4,980 37
On Jefferson Street, from Lowell to Lewis Street	385 00
On Gorham Street, from Middlesex to Charles Street....	924 93
On Willow Street.....	297 00

Amount carried forward,..... \$35,466 19

<i>Amounts brought forward</i> ,.....	\$35,466 19
On Merrimack Street, from Nesmith to Fayette Street...	935 35
On Merrimack and Prescott Streets..	503 62
On Merrimack Street, near Colburn Street.....	255 30
On Garnet Street...	102 50
From Pawtucket Canal, through Middlesex Street to Grand Street ..	526 11
On Suffolk Street	1,137 33
On Bartlett Street.	350 40
On Gorham Street, from Union to Auburn Street....	625 94
Through Middlesex to Queen Street, and Queen to Somerset Street ..	529 07
On Fenwick Street.	526 60
On Dummer Street, from Lowell to Mechanic Street.....	349 48
On Worthen Street, from Lowell to Mechanic Street ..	563 83
On Lee Street to John Street, and through John to Vine Street and passage-way east of the Museum; also a drain through John Street Avenue.....	555 23
On Middlesex Street.	352 12
On Alder Street.....	249 52
From Central through Charles and Lawrence Streets to Concord River.....	2,090 11
On Hurd Street.....	703 76
On Middlesex Place... ..	281 49
On Merrimack Street, from Race Street, westerly.....	41 66
On Lowell Street, from Suffolk to Cabot Street.....	508 37
On Central Street, from Union to Ames Street.....	518 34
Through part of Andover, through Clay, and partly through Oak and High Streets.....	2,269 31
Through Elliott to Appleton Street, westerly to Thorn-dike Street	1,455 66
On Merrimack Street, from Tremont to Hanover Street...	317 75
On Middlesex Street, from Grand Street, westerly.....	187 81
On Ash Street.....	147 20
On Dutton Street.....	493 24
On Chestnut Street.....	340 69
On Adams Street.	885 80
On Union and Chapel Streets.....	724 85
On Third Street.	748 16
On Kirk Avenue.	238 64
On East Merrimack Street.....	231 43
On Bridge Street.....	1,500 00
On Branch Street.....	152 44
On Water Street.....	383 54
On Salem Street.....	217 53
On Jackson Street.....	185 89
<i>Amount carried forward</i> ,.....	\$57,652 26

<i>Amount brought forward</i> ,.....	\$57,652 26
On Fourth Street.....	927 98
On Adams and Lagrange Streets.....	1,257 47
On Fayette Street.....	192 95
On Hanover Street.....	85 85
On Merrimack Street, from Decatur Street, westerly.....	136 55
On Andover Street.....	418 99
On Tyler Street.....	468 24
On Branch Street.....	764 58
On Fifth Street.....	469 41
On Favor Street.....	132 22
On Dutton Street, from Lowell Street, westerly.....	234 51
On Suffolk Street, from Cross Street, southerly.....	459 32
On River Street.....	301 30
On Andover Street.....	490 00
On Pawtucket Street.....	423 00
On Seventh Street.....	282 00
On Cady and Lawrence Streets.....	620 92
On North Street.....	331 80
On Warren Street, sixty feet from Central Street.....	181 30
On John Street Avenue.....	156 44
On Bridge Street, commencing at Tenth Street, to Ferry Lane Road.....	258 42
On Elm, Linden, Union, to Auburn Street.....	1,667 74
On Winter Street.....	632 10
On Crosby Street, from Meadow River Brook to Central Street.....	3,309 43
On Sixth Street, from Read Street, to the sewer in Bridge Street.....	650 50
On Mount Vernon Street, from Rock Street to Fulton Street.....	2,128 00
On Cedar Street to Keene Street.....	1,304 55
On Marion Street, from Cross Street to Lagrange Street..	1,165 70
On Branch Street, from School Street to a point near Loring Street.....	964 00
On Chapel, Walnut and Central Streets, from Crosby Street to near Gorham Street.....	3,834 86
On Cross Street, from Fletcher Street, westerly to Mount Vernon Street.....	1,398 15
On Passage-way between Fletcher Street and Willie Street, crossing Broadway to land of A. L. Brooks.....	372 40
On Wamesit Street, from Lawrence Street to within about seventy-seven feet of Hosford Square.....	1,302 16
On Taylor Street, from Wamesit Street to Concord River,	1,402 95
On Oak Street, from Clay Street to Harrison Street.....	800 57
On South Street, from Summer Street to the sewer on Appleton Street.....	895 81
<i>Amount carried forward</i> ,.....	\$88,074 43

<i>Amount brought forward,</i>	\$88,074 43
For Re-constructing Sewer from Concord River through Church Street to George Street; thence through George Street to Tyler Street; thence through Tyler Street to Central Street; thence through Central Street to Charles Street; thence through Charles Street to Gorham Street; thence through Summer Street to the South Common (no assessments made)..	27,640 51
On Central Street, from present sewer in said Street at the intersection of Central and Chapel Streets, northerly, through Central Street to Elm Street.....	4,559 80
On Lawrence Street, from present sewer in Taylor Street, northerly, through Lawrence Street to Richmond Avenue.....	3,179 80
On Gorham and Central Streets, from Walnut Street through Gorham Street to Central Street; thence through Central Street to Crosby Street.....	5,356 50
On Highland Street, from Gorham Street.....	3,153 80
On Thorndike Street.....	2,932 75
On School and Grove Streets, from Branch Street through School Street to Grove Street; thence through Grove Street to Coral Street.....	2,847 88
On Fast Merrimack Street.....	494 00
On Dutton Street, from Market Street to Broadway.....	2,582 06
On Jewett, West Sixth, and Hampshire Streets, from Cornburn Street through Jewett Street to the Pumping Station of the Lowell Water Works; thence through West Sixth Street from the sewer in Jewett Street to the old stone drain which crosses West Sixth Street, and from the sewer in West Sixth Street, northerly, about fifty feet in Hampshire Street.....	2,817 16
On Howard Street, and Howard Street Outlet, between Middlesex and Railroad Streets.....	6,304 94
For Reconstructing Sewers in Suffolk and Moody Streets.	21,419 80
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	\$171,363 43

RESERVOIRS.

On Union Street, at foot of Chapel Street.....	\$680 00
On Tyler Street, at Junction with George Street.....	669 00
On Chestnut Street, at Junction with Willow Street.....	763 00
On Cross Street.....	675 00
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<i>Amount carried forward,</i>	\$2,787 00

<i>Amount brought forward</i> ,.....	\$2,787 00
*On East Merrimack Street, at Junction with High Street, and one on Salem Street, near Common Street, both.	1,964 82
On Central Street, at foot of Elm Street.....	600 00
In Centralville.....	650 00
On Branch Street.....	588 86
On Fourth Street, Centralville.....	397 88
On Westford Street.....	280 48
On Chapel Street.....	474 21
On Varney Street.....	474 21
On the corner of Wilder and Middlesex Streets.....	994 44
On the corner of Bridge and Seventh Streets.....	1,472 94
On the corner of Howard and Hale Streets.....	1,146 92
On Forest Street.....	770 00
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	\$12,601 76

WATER PIPE.

Expended in 1851.....	\$8,304 12
“ 1852.....	3,934 15
“ 1853.....	221 56
“ 1857.....	4,572 45
“ 1867.....	26,079 61
“ 1868.....	12,569 26
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	†\$55,681 15

* East Merrimack Street Reservoir dispensed with.

† Above amount was charged to Appropriation for Water Pipe.

FIRE DEPARTMENT.

The following schedule, furnished by the Chief Engineer, shows the number of Engines and Firemen, and condition of the Apparatus belonging to the Fire Department, with the number of feet of Water Pipe laid, and the number of Hydrants:

HOPE STEAM FIRE ENGINE COMPANY, No. 1.

13 MEMBERS.—HOUSE ON MIDDLE STREET.

Apparatus and Property owned by the City, in care of this Company.

This Company was organized and put in service, May 1, 1866. The steamer was built by the Union Machine Company, of Fitchburg, and given in charge of this Company in October, 1870. The engine has two double-acting steam cylinders, $7\frac{1}{8}$ inches in diameter, and 8 inch stroke, and two double-acting pumps, $4\frac{3}{8}$ inches in diameter, and 8 inch stroke; weight, when loaded, 7575 lbs.; hose carriage built by Juckett & Freeman, Boston, in 1869, carrying 500 feet of hose, drawn by hand; 1500 feet $2\frac{1}{2}$ inch leading hose, in good condition; 32 feet suction hose; 6 reducing couplings; 2 axes; 1 pair horses; 1 pair harnesses; 4 blankets; 1 pair hoods; 1 pair lead bars; 1 whiffletree; 3 beds and bedding; 1 bureau; 18 cane seat chairs; 6 common chairs; 1 table; 1 mirror; 1 two-way chuck; 1 four-way chuck; 1 spreading nozzle; 1 stop nozzle and pipe, and all necessary tools for cleaning horses and repairing engine; 13 silver badges.

TORRENT STEAM FIRE ENGINE COMPANY, No. 2.

13 MEMBERS.—HOUSE ON MIDDLESEX STREET.

Apparatus and Property owned by the City, in care of this Company.

This Company was organized and put into service, May 1, 1861. The steamer was built by Hunneman & Co., Boston, and given in charge of this Company, February 28, 1868. The engine has two double-acting steam cylinders, 8 inches in diameter, and 8 inch stroke; and two double-acting pumps, $4\frac{3}{8}$ inches in diameter, and 8 inch stroke. The pumps are so arranged that they can be worked separately in case of an

accident to either of them : the boiler will make steam enough to run the engine in five minutes ; weight, when loaded, 7720 lbs. ; 30 feet suction hose, with hydrant couplings ; hose carriage built in 1868, by Hunneman & Co., drawn by hand, carrying 500 feet of hose ; 1700 feet $2\frac{1}{2}$ inch leading hose, in good condition ; 2 axes ; 1 reducing coupling ; 1 spreading nozzle ; 1 stop nozzle with pipe ; 14 cane-seat chairs ; 3 common chairs ; 1 table ; 2 stoves ; 1 bureau ; 3 beds and bedding ; 2 mirrors ; 1 pair horses ; 1 pair harnesses ; 4 blankets ; 1 pair lead bars ; and all necessary tools for cleaning horses and repairs of engine ; 1 two-way chuck ; 1 copper boiler ; 1 jack-screw ; 1 fuel wagon ; 13 hat-fronts ; 1 carriage jack ; 75 feet small rubber hose ; 1 rotary pump ; 13 silver badges.

WAMESIT STEAM FIRE ENGINE COMPANY, No. 3.

13 MEMBERS.—HOUSE ON MIDDLE STREET.

Apparatus and Property owned by the City, in care of this Company.

This Company was organized and put into service, in October, 1859. In November, 1866, they were given in charge of a new steamer built by Hunneman & Co., of the same style, capacity, etc., as Steam Fire Engine No. 2 ; weight, when loaded, 7650 lbs. ; 30 feet suction hose, with hydrant couplings ; hose-carriage built by Hunneman & Co., Boston, carrying 500 feet hose ; 2 reducing couplings ; 2 axes ; 1 spreading nozzle ; 1 stop-nozzle with pipe ; 1650 feet $2\frac{1}{2}$ inch leading hose, in good condition ; 6 wooden chairs ; 18 cane-seat chairs ; 1 two-way chuck ; 1 table ; 2 mirrors ; 2 desks ; 1 bureau ; 3 beds and bedding ; 1 wood stove ; 2 jack-screws ; 1 pair horses ; 2 pair harnesses ; 4 blankets ; 1 pair lead bars, and all necessary tools for cleaning horses and repairs of engine ; 13 hat-fronts ; 13 silver badges.

The following articles are owned by the City and are used by both Companies : 2 whiffletrees ; 1 large stove ; 1 clock ; 50 feet $\frac{3}{4}$ inch rubber hose and pipe ; 1 copper boiler ; 1 fuel wagon ; 1 pair of runners.

RELIEF STEAM FIRE ENGINE.

HOUSE ON WARREN STREET.

Apparatus and Property owned by the City, in care of Steward of Ocean Hose Company.

Engine built by Silsby, Mynderse & Co., Seneca Falls, in 1861, on the rotary principle, 12 inch engine, 6 inch pump. In 1866 a new boiler was built by Hunneman & Co., Boston, which will make steam enough to run the engine in 5 minutes ; weight, when loaded, 5300 lbs. ; 30 feet suction hose, with hydrant couplings ; hose carriage built in 1861, by Joel Jenkins, drawn by horse, carrying 800 feet of hose, and all necessary tools for repairs of engine ; 500 feet $2\frac{1}{4}$ inch hose ; 100 feet rubber hose.

OCEAN HOSE COMPANY, No. 1.

12 MEMBERS.—HOUSE ON WARREN STREET.

Apparatus and Property owned by the City, in care of this Company.

Hose Carriage built by Hunneman & Co., Boston, drawn by hand, carrying 750 feet of hose; 2000 feet $2\frac{1}{2}$ inch leading hose, in good condition; 1 spreading nozzle; 2 axes; 2 stoves; 1 two-way chuck; 4 reducing couplings; 1 table; 1 copper boiler; 1 harness; 20 chairs; 2 mirrors; 1 jack; 1 coal hod; 12 hat-fronts; 30 feet of small rubber hose; 1 settee; 2 lanterns; 1 carriage jack; 2 shovels; 12 silver badges.

MECHANICS' HOSE COMPANY, No. 2.

12 MEMBERS.—HOUSE ON CROSS STREET.

Apparatus and Property owned by the City, in care of this Company.

Hose Carriage built by Juckett & Freeman of Boston, in 1869, carrying 900 feet of hose; 1600 feet of $2\frac{1}{2}$ inch leading hose, in good condition; 1 reducer; 1 spreading nozzle; 1 jack; 50 feet rubber hose and pipe; 2 settees; 6 common chairs; 12 cane-seat chairs; 1 mirror; 1 table; 2 ladders; 1 axe; 1 two-way chuck; 2 stoves; 12 hat-fronts; 12 silver badges.

EXCELSIOR HOSE COMPANY, No. 3.

12 MEMBERS.—HOUSE ON CENTRAL STREET.

Apparatus and Property owned by the City, in care of this Company.

Hose Carriage built by Juckett & Freeman, Boston, in 1869, drawn by hand, carrying 900 feet of hose; 1500 feet $2\frac{1}{2}$ inch hose; 30 feet $\frac{3}{4}$ inch hose; 2 axes; 4 buckets; 8 common chairs; 13 cane-seat chairs; 1 mirror; 2 stoves; 1 table; 2 settees; 2 coal-hods; 1 jack; 20 feet rubber hose; 1 ladder; 4 reducers; 6 hat-fronts; 1 two-way chuck; 1 two-horse carriage-pole; 1 copper boiler; 1 coal sifter; 2 shovels; 1 carriage-jack; 3 lanterns; 1 wrench; 1 reducer; 1 pair steps; 12 silver badges.

MAZEPPA HOSE COMPANY, No. 4.

12 MEMBERS.—HOUSE ON FAYETTE STREET. *

Apparatus and Property owned by the City, in care of this Company.

Hose Carriage built by Wright & Co., Lowell, in 1871, carrying 900 feet of hose, drawn by hand; 1650 feet $2\frac{1}{2}$ inch hose, in good condition; 1 spreading nozzle; 2 axes; 1 two-way chuck; 2 reducing couplings; 2 stoves; 1 coal-hod; 1 mirror; 1 table; 23 chairs; 1 settee; 30 feet of rubber hose and pipe; 12 hat-fronts; 5 lanterns; 1 iron bar; 1 shovel; 12 silver badges.

WELLMAN HOSE COMPANY, No. 5.

12 MEMBERS.—HOUSE ON FOURTH STREET.

FRANKLIN HOOK AND LADDER COMPANY, No. 1.

28 MEMBERS.—HOUSE ON MIDDLE STREET.

Apparatus and Property owned by the City, in care of this Company.

Two hook and ladder carriages, built by Juckett & Freeman, of Boston, in 1869, carrying the following apparatus: 8 hooks, 12 props, 10 rakes, 8 pitchforks, 4 sledges, 4 axes, 6 stakes, 4 guy ropes of 84 feet each, 200 feet street rope, 16 ladders of the following lengths: 2 roof ladders, 18 feet each; 1 do. do., of 20 feet; 2 do. do., of 25 feet each; 1 do. do., of 28 feet; 1 ladder of 12 feet; 1 do., of 24 feet; 4 do., of 33 feet; 2 butt ladders, of 28 feet each; 2 tip ladders, of 30 feet each. By joining the tips and butts together they are enabled to raise ladders of 58 feet in length. 25 feet of rubber hose and pipe; 6 ladders; 100 feet of chain; 10 chairs; 1 stove; 1 mirror; 1 copper boiler; 1 horse and harness; 2 blankets; 29 silver badges.

FIRE APPARATUS AT STATIONARY POINTS.

To be used by Volunteers when Required.

ROCKET ENGINE, No. 2.—*House, Ayer's City.* Hunneman & Co. engine, owned by City; diameter of cylinders, $5\frac{1}{2}$ inches; 16 inch stroke of piston; 300 feet of leading hose; 20 feet suction hose.

FIRE KING ENGINE, No. 6.—*Kept at Poor Farm.* Hunneman & Co. engine, owned by City; diameter of cylinders, $3\frac{1}{2}$ inches; 12 inch stroke; 300 feet 2 inch leather hose.

FIRE ALARM TELEGRAPH; four circuits, and all necessary apparatus for the working of the same.

RECAPITULATION.

6 Engineers; 118 Firemen; 2 Hand Engines; 4 Steam Fire Engines; 10 Hose Carriages; 7 Hose Reels on runners; 2 Hook and Ladder Carriages; 13,000 feet $2\frac{1}{2}$ inch Leading Hose; 1,600 feet $2\frac{1}{4}$ inch Leading Hose; 178 feet Suction Hose; 7 Horses; 2 Fuel Wagons; 1 Small Wagon; 2 Trucks; 1 large Traverse runner Sleigh; 80 Hat-fronts; 4 Double Harnesses; 2 Single Harnesses; 8 Hooks; 26 Ladders; 12 Props; 10 Rakes; 8 Pitchforks; 4 Sledges; 19 Axes; 200 feet Street Rope; 100 feet of Chain; 28 Reducing Couplings; 7 Spreading Nozzles; 3 Stop Nozzles with pipe; 9 Beds and Bedding; 140

Chairs ; 31 Settees ; 10 Mirrors ; 17 Stoves ; 8 Tables ; 3 Bureaus ; 6 Blankets ; 7 two-way chucks ; 5 Copper Boilers ; 4 Jack-screws ; 2 Desks ; 122 Silver Badges ; 1 set dies for Department badge.

The above apparatus is owned by the City, and is in good working order. The several companies are furnished with Spanners, Lanterns, Signal Lanterns, Belts, Axes, Crowbars, Shovels, and all necessary apparatus for the performance of their respective duties. There are 17 Fire Buckets at the Middle Street Engine House.

The City of Lowell has 16 Reservoirs where water can be procured in case of fire, situated as follows ; 1 on Tyler Street, at the corner of George Street ; 1 on Chestnut Street, at the corner of Willow Street ; 1 on Salem Street, near the intersection of Willie Street ; 1 on Cross Street, between Fletcher and Willie Streets ; 1 on Central Street, Hosford Square ; 1 on Myrtle Street, at the head of Fifth Street, Centralville ; 1 on Union Street, at the corner of Chapel Street ; 1 on the corner of Westford and Grand Streets ; 1 on Fourth Street, near Read Street ; 1 on Chapel Street, at the corner of Keene Street ; 1 on Varney Street near Mt. Vernon Street ; 1 on the corner of Queen Street and Branch Street ; 1 on the corner of Wilder Street and Middlesex Street ; 1 on the corner of Bridge and Seventh Streets ; 1 on Howard Street, at the corner of Hale Street ; 1 on Forest Street.

WATER PIPE DEPARTMENT.

LENGTH OF WATER PIPE LAID IN THE CITY, PRIOR TO THE
COMMENCEMENT OF CONSTRUCTION FOR THE
WATER WORKS.

ALSO, SIZE OF PIPE AND NUMBER OF HYDRANTS.

	Length of Pipe.	No. of Hydrants.	Size of Pipe.
Central Street, from Merrimack to Market.....	430	2	6 in.
Central Street, from Warren to Middlesex.....	544	3	6 "
Central Street, from Warren to Middlesex.....	544	1	12 "
Central Street, from Middlesex to Church.....	240	1	4 "
Central Street, from Tower's Corner.....	2,429	10	12 "
Middlesex Street, from Central to Branch.....	3,711	14	12 "
Branch Street, from Middlesex to Smith.....	500	3	12 "
Gorham Street, from Central to South.....	1,950	7	4 "
Bridge Street.....	475	4	8 "
French Street.....	890	4	4 "
Kirk Street.....	770	4	4 "
Merrimack Street, from Bridge to Cabot.....	3,370	13	12 "
Merrimack to Middle (through City Hall Av.)..	220	2	4 "
Merrimack Street, from Cabot westerly.....	440	2	8 "
Cabot Street, from Merrimack to Adams.....	300	1	12 "
Adams Street.....	2,255	11	8 "
Broadway, from Adams to School.....	1,940	6	10 "
Cushing Street.....	520	9	8 "
From Cushing Street to Middlesex.....	1,035	3	8 "
	22,563	100	

Property belonging to Water Pipe Department.

About 1000 feet cast iron pipe, 6 inch ; 10 yard hydrants ; 4 tamping mauls ; 3 torch stands ; 2 iron bars ; 1 wrench, 1 hydrant pattern ; 1 two-way chuck pattern ; 1 pump and pipe.

STOP-GATES.

There are 14 Stop-Gates ; one 12 inch, on Central Street, opposite Warren Street ; one 8 inch, at the corner of Merrimack and Worthen Streets ; one 8 inch, at the corner of Merrimack and Bridge Streets ; one 8 inch, on Cabot, near Merrimack Street ; one 12 inch corner of Central and Jackson Streets ; one 12 inch, Tower's corner ; one 8 inch, Western Avenue ; one 8 inch, Middlesex Street ; and one Safety Valve, on Dutton Street, at the head of Wamesit Court ; one 6 inch, on Gorham Street ; one 12 inch, on corner of Middlesex and Gorham Street ; one 12 inch, on Broadway, near Adams Street ; one 8 inch, on Adams Street, near Broadway ; one 8 inch, on Adams, near Salem Street ; one 4 inch, in School-house yard on Merrimack Street.

PROPERTY OWNED BY THE CITY, NOT AVAILABLE.

Old Burial Ground on School Street.
Burial Ground on the Boston Road, south of the Railroad.
Burial Ground on the same Road, south of the last named.

RECAPITULATION OF ASSETS OF THE CITY.

Real Estate.....	\$646,672 49
Water Works.....	1,542,630 88
Personal Property in care of Superintendent of Streets...	19,294 11
Personal Property in care of Superintendent of Almshouse,	13,304 27
Personal Property in care of Superintendent of Street Lamps.....	14,426 00
Personal Property in care of Chief Engineer.....	40,000 00
Fire Alarm Telegraph in care of Chief Engineer.....	16,700 00
Personal Property at City Marshal's Office and Police Sta- tion, and Police Court Room.....	1,262 90
Personal Property at the Government Building, Hunting- ton Hall and Jackson Hall.....	8,000 00
Personal Property in care of Superintendent of Public Buildings.....	2,914 74
Personal Property in School-houses.....	10,000 00
Books in the City Library.....	12,000 00
Debts due the City..	82,504 84
Bell in High Street Church Tower.....	500 00
Bell on Varnum School-house.....	1,000 00
Cast Steel Bell on Market House Building, (so called)....	900 00
Flag Stuffs.....	700 00
Furniture in Armories and Drill Rooms.....	375 00
Furniture in Ward Rooms.....	50 00
	<hr/>
	\$2,413,235 23

LEASES AND RENTS OF PUBLIC BUILDINGS OWNED BY THE CITY.

	<i>Per Annum.</i>
Rented to Carleton & Hovey, one store in City Government Building.....	\$1,300 00
Leased to William Bascom, one store in City Government Building, five years from Jan 1, 1872.....	700 00
Rented to E. C. Leslie & Co., one store in City Government Building.....	940 00
Leased to Alfred Gilman & Son, one store in City Government Building, four years from Jan. 1, 1873.....	900 00
Leased to Charles P. Talbot & Co., store and cellar in Market House Building, for five years, from October 1, 1873....	1,200 00
Rented to Commonwealth, for Armories.....	1,200 00
Rented to J. W. Bennett, land, corner of Middlesex and Grand Streets.....	50 00
Rented to County of Middlesex, Police Court Rooms.....	500 00
Rented to Margaret Fiske, tenement No. 11 Kirk Street, in brick block owned by the City.....	350 00
Rented to Mrs. W. H. Gage, tenement No. 13 Kirk Street, in brick block owned by the City.....	300 00
Rented to S. W. Stickney, tenement No. 15 Kirk Street, in brick block owned by the City.....	220 00
Rented to Mrs. C. S. Finn, tenement No. 17 Kirk Street, in brick block owned by the City.....	400 00
	<hr/> \$8,060 00

LANDS AND BUILDINGS FOR WHICH THE CITY PAYS RENT.

	<i>Per Annum.</i>
The City pays to the Boston & Lowell Railroad Company, for ground rent for Huntington and Jackson Hall Building, (on lease)	\$475 00
The City pays on lease to Charles B. Coburn, for rent of Police Court Rooms for five years and six months from April 1, 1870.	650 00
The City pays on lease to Hocum Hosford, for rent of Rooms for City Library (Masonic Temple), for ten years from January 1, 1872.	1,200 00
The City pays on lease to Merchants' National Bank for rent of Rooms, for purposes connected with the Water Works, for five years from April 1, 1873	550 00
	<hr/> \$2,875 00

GEORGE GARDNER, *Auditor.*

TREASURER'S ACCOUNT, 1873.

CITY OF LOWELL,

CITY TREASURER'S OFFICE, January 13, 1874.

To the City Council :

Gentlemen,—I have the honor to submit herewith an account of the Receipts and Payments from January 1, to December 31, 1873.

Respectfully submitted.

JOHN H. McALVIN, *City Treasurer.*

IN COMMON COUNCIL, January 13, 1874.

Read and referred to the Joint Standing Committee on Accounts ; sent up for concurrence.

GEO. GARDNER, *Clerk.*

IN BOARD OF ALDERMEN, January 13, 1874.

Read and referred in concurrence.

SAMUEL A. McPHETRES, *City Clerk.*

DR. CITY OF LOWELL *in account current with* JOHN H. McALVIN,

For Cash paid on account of:—

Schools,	-	-	-	-	-	-	-	-	-	-	\$115,400 78
School-houses,	-	-	-	-	-	-	-	-	-	-	46,265 55
Streets,	-	-	-	-	-	-	-	-	-	-	140,969 01
Reserved Fund,	-	-	-	-	-	-	-	-	-	-	26,553 49
Paupers,	-	-	-	-	-	-	-	-	-	-	22,201 30
Police,	-	-	-	-	-	-	-	-	-	-	44,944 57
Fire Department,	-	-	-	-	-	-	-	-	-	-	36,878 85
Water Pipe,	-	-	-	-	-	-	-	-	-	-	622 15
Sewers,	-	-	-	-	-	-	-	-	-	-	64,305 84
Commons,	-	-	-	-	-	-	-	-	-	-	6,805 29
Printing,	-	-	-	-	-	-	-	-	-	-	3,084 03
Lighting,	-	-	-	-	-	-	-	-	-	-	18,071 15
Repairs Public Buildings,	-	-	-	-	-	-	-	-	-	-	4,712 76
Library,	-	-	-	-	-	-	-	-	-	-	5,354 93
Water Works,	-	-	-	-	-	-	-	-	-	-	349,460 91
Health,	-	-	-	-	-	-	-	-	-	-	2,030 23
Salaries,	-	-	-	-	-	-	-	-	-	-	18,299 41
State Aid,	-	-	-	-	-	-	-	-	-	-	16,628 62
Interest,	-	-	-	-	-	-	-	-	-	-	31,702 39
Temporary Loans,	-	-	-	-	-	-	-	-	-	-	191,088 00
City Debt,	-	-	-	-	-	-	-	-	-	-	15,124 63
State Tax,	-	-	-	-	-	-	-	-	-	-	43,402 50
County Tax,	-	-	-	-	-	-	-	-	-	-	24,726 24
Sinking Fund,	-	-	-	-	-	-	-	-	-	-	25,000 00
National Bank Tax,	-	-	-	-	-	-	-	-	-	-	22,200 58
Balance in the Treasury, Jan. 1, 1874,	-	-	-	-	-	-	-	-	-	-	134,972 85

\$1,410,806 06

City Treasurer, January 1 to December 31, 1873.

CR.

By Cash on hand, January 1, 1873,	-	-	-	-	-	-	-	-	-	\$159,301 71
By Cash received on account of :—										
Schools,	-	-	-	-	-	-	-	-	-	2,035 59
School-houses,	-	-	-	-	-	-	-	-	-	3,718 83
Streets,	-	-	-	-	-	-	-	-	-	44,869 72
Reserved Fund,	-	-	-	-	-	-	-	-	-	15,418 44
Paupers,	-	-	-	-	-	-	-	-	-	6,721 72
Police,	-	-	-	-	-	-	-	-	-	12,385 00
Fire Department,	-	-	-	-	-	-	-	-	-	824 02
Sewers,	-	-	-	-	-	-	-	-	-	3,980 89
Commons,	-	-	-	-	-	-	-	-	-	1,428 77
Lighting,	-	-	-	-	-	-	-	-	-	115 66
Repairs Public Buildings,	-	-	-	-	-	-	-	-	-	481 08
Library,	-	-	-	-	-	-	-	-	-	3,016 76
Water Works,	-	-	-	-	-	-	-	-	-	281,333 59
Health,	-	-	-	-	-	-	-	-	-	118 57
State Aid,	-	-	-	-	-	-	-	-	-	18,117 33
Interest,	-	-	-	-	-	-	-	-	-	4,134 94
Taxes of 1870,	-	-	-	-	-	-	-	-	-	4 00
“ 1871,	-	-	-	-	-	-	-	-	-	6 00
“ 1872,	-	-	-	-	-	-	-	-	-	3,017 51
“ 1873,	-	-	-	-	-	-	-	-	-	604,625 55
Temporary Loans,	-	-	-	-	-	-	-	-	-	191,088 00
City Debt,	-	-	-	-	-	-	-	-	-	30,000 00
Corporation Tax,	-	-	-	-	-	-	-	-	-	20,635 54
National Bank Tax,	-	-	-	-	-	-	-	-	-	3,426 84

\$1,410,806 06

CITY OF LOWELL.

IN COMMITTEE ON ACCOUNTS,
January 16, 1874.

To the City Council:

Gentlemen,—The Joint Committee on Accounts for the year 1874, to whom was referred the account current of John H. McAlvin, City Treasurer, from January 1 to December 31, 1873, hereby certify that in pursuance of Chapter First, Section Seventh, of the Ordinances of the City of Lowell, we have examined the said account, and find the same correctly cast, and all payments therein charged sustained by proper vouchers.

We find there has been received into the Treasury, from all sources, from January 1, to December 31, 1873, the sum of one million four hundred and ten thousand eight hundred and six dollars and six cents (\$1,410,806.06), and there has been paid from the Treasury during the same period, the sum of one million two hundred and seventy-five thousand eight hundred and thirty-three dollars and twenty-one cents (\$1,275,833.21), leaving a balance in the hands of the Treasurer, December 31, 1873, of one hundred and thirty-four thousand nine hundred and seventy-two dollars and eighty-five cents (\$134,972.85).

We find there has been received into the Treasury, from all sources, from January 1, 1874, to January 16, 1874—the day of the date of this report—the sum of one hundred and sixty-four thousand five hundred and forty-eight dollars and eighty-one cents (\$164,548.81), and there has been paid from the Treasury during the same period, all of said payments being sustained by proper vouchers, the sum of fifty-two thousand nine hundred and twenty-six dollars and twelve cents (\$52,926.12), leaving, on the day of the date of this report, a cash balance of one hundred and eleven thousand six hundred and twenty-two dollars and sixty-nine cents (\$111,622.69), in the hands of the City Treasurer, which we have verified by an *actual* examination of all assets in the hands of the City Treasurer.

We also certify that the amount standing to the credit of the “City of Lowell Water Loan Sinking Fund,” is twenty-five thousand five hundred and seventy dollars (\$25,570), consisting of twenty-six \$1000 City of Lowell Water Loan Bonds, purchased at a cost of twenty-five thousand eighty-one dollars and fifty cents (\$25,081.50), and four hundred and eighty-eight dollars and fifty cents (\$488.50), in cash, all of which we find in the hands of the City Treasurer.

Respectfully submitted.

JOSEPH S. BROWN,	} <i>Joint Committee</i>
JONATHAN KENDALL,	
CHARLES T. GODDARD,	
JARED P. MAXFIELD,	
SAMUEL P. MARIN,	} <i>on Accounts</i>
	} <i>of 1874.</i>

IN COMMON COUNCIL, January 27, 1874.

Read and accepted; sent up for concurrence.

GEORGE GARDNER, *Clerk.*

IN BOARD OF ALDERMEN, January 27, 1874.

Read and accepted in concurrence.

SAMUEL A. McPHETRES, *City Clerk.*

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ORDINANCES OF THE CITY OF LOWELL, CHAPTER 1, SECTION 5.

"No bill or claim against the City, other than judgments of the Judicial Courts, shall be allowed or passed by the Committee on Accounts, unless such bill or claim shall be *approved or certified* by some agent, officer or committee, authorized on behalf of the City, to make the contract or cause the expenditure to be incurred; or unless such expenditure be expressly required by some specific vote of the Council."

CLAIMS AGAINST THE CITY.

IN COMMITTEE ON ACCOUNTS, January 14th, 1874.

Ordered, That hereafter all Pauper bills be presented to the Auditor on or before the 28th day of each month.

2nd—That all other bills be made up to include the last day of the month, and that, duly certified, they be presented to the Auditor on or before the first day of the following month, and be payable on the tenth.

All bills presented for payment must specify what the article or articles were for—and, when for labor, where it was performed—with proper dates.

Items charged to different Appropriations should be made out on *separate* bills.

All bills not approved and presented as above, will lie over till the next month.

JOSEPH S. BROWN, JONATHAN KENDALL, CHARLES T. GODDARD, JARED P. MAXFIELD, SAMUEL P. MARIN,	} Committee on Accounts.
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THE AUDITOR'S OFFICE is in the City Government Building. Office hours from 8 to 12, A. M., and from 2 to 5 o'clock, P. M.

TO PERSONS HAVING CLAIMS AGAINST THE CITY.

It is very desirable that bills presented for payment should specify what the article or articles were for—and, when for labor, where it was performed—with proper dates.

If persons having bills against the City would be more careful in specifying particulars, it would enable the Auditor to prepare his Annual Report with much less trouble.

GEORGE GARDNER, *Auditor.*

The amount due semi-annually to members of the Fire Department becomes payable on and after the 10th of May and November.

TREASURER'S OFFICE HOURS.

From 9 A. M., to 12, M., and from 2 to 5, P. M. During time for receiving taxes from 8, A. M., to 12, M.; from 2 to 5, and from 7 to 9, P. M.; closed Wednesday and Thursday evenings.

CITY DOCUMENT. CITY OF LOWELL.

SALARIES

OF THE

OFFICERS

OF THE

CITY OF



LOWELL,

FOR THE YEAR

1874-75.

Stone, Huse & Co., Printers.

CITY OF LOWELL.

IN THE YEAR EIGHTEEN HUNDRED AND SEVENTY-THREE.

RESOLUTION

ESTABLISHING THE SALARIES OF THE OFFICERS OF
THE CITY OF LOWELL FOR THE YEAR 1874-5.

*RESOLVED, by the Mayor, Aldermen and Common Council
of the City of Lowell, in City Council assembled,
as follows:*

THE SALARIES of the several City officers for the year beginning on the first Monday in January, one thousand eight hundred and seventy-four, shall be as herein mentioned; to be paid monthly, unless herein otherwise ordered.

SECTION 1. The salary of the *Mayor* shall be at the rate of fifteen hundred dollars per annum.

SEC. 2. The salary of the *City Clerk* shall be at the rate of two thousand dollars per annum, and there shall be allowed his office three hundred dollars for clerk hire; and he shall account for all sums of money received in his official capacity.

SEC. 3. The salary of the *City Treasurer* shall be at the rate of twenty-five hundred dollars per annum for performing the duties of City Treasurer and Collector of Taxes; and there shall be allowed his office the sum of five hundred dollars for clerk hire, and he shall appoint a clerk to render him such assistance as may be required. He shall give a bond in the sum of fifty thousand dollars, with good and sufficient sureties satisfactory to the Mayor and Aldermen, for the faithful performance of his duties, and for an account of all sums of money received in the sale of Water Bonds and the collection of Water Rates, and in the capacity of City Treasurer and Collector of Taxes.

SEC. 4. The salary of the *Auditor of Accounts* shall be at the rate of sixteen hundred dollars per annum, and there shall be allowed his office three hundred dollars for clerk hire, and he shall account for all sums of money received by him in said capacity.

SEC. 5. The salary of the *City Solicitor* shall be at the rate of fifteen hundred dollars per annum, which shall be in full for all services rendered the city, and he shall account for all sums of money received by him in said capacity.

SEC. 6. The salary of the *Civil Engineer* shall be at the rate of twenty-five hundred dollars per annum, which shall be in full for his services, and he shall devote his whole time to the duties of his office; and he shall be allowed a sum not exceeding one thousand dollars for assistance, and he shall, in addition to the duties prescribed in Sec. 3, Chap. 11, City Ordinances, act as engineer of the Water Board.

SEC. 7. The salary of the *City Physician and Superintendent of Burials* shall be at the rate of seven hundred dollars per annum; and he shall furnish all medicines used by him in performing the duties of his office.

SEC. 8. The salary of the *Librarian of the City Library* shall be at the rate of twelve hundred dollars per annum; and there shall be allowed the sum of three hundred dollars for the services of an assistant.

SEC. 9. The salary of the *Clerk of the Common Council* shall be at the rate of four hundred dollars per annum.

SEC. 10. The salary of the *Messenger of the City Council* shall be at the rate of twelve hundred dollars per annum.

SEC. 11. The salary of the *Measurer of Wood and Bark* shall be at the rate of eight hundred

dollars per annum; and he shall account for all fees received by him in his official capacity, and shall pay the same into the Treasury monthly.

SEC. 12. The salary of the *Pound Keeper* shall be at the rate of twenty-five dollars per annum; and he shall account for all sums of money received by him in that capacity.

POLICE.

SEC. 13. The salary of the *City Marshal* shall be at the rate of eighteen hundred dollars per annum; and he shall furnish a horse and carriage for the use of the Marshal and his Deputy.

SEC. 14. The compensation of the *Deputy Marshal, and Captain of the Night Watch* shall be at the rate of three dollars and twenty-five cents per day, each.

The compensation of the regular *Day Police* shall be at the rate of two dollars and seventy-five cents per day.

The compensation of the *Night Police, and all other Police officers*, shall be at the rate of two dollars and seventy-five cents per day.

SEC. 15. Police officers acting as tythingmen shall receive no extra compensation therefor. All fees received by the officers mentioned in the

two preceding sections, for attendance as witnesses, or for any other service in an official capacity, shall be paid by the officer receiving the same, to the City Treasurer. *Provided, however,* that said officers need not account for any fees for travel and attendance before the Supreme Judicial and Superior Court, as witnesses.

SEC. 16. The *Standing Justice of the Police Court of Lowell* shall be paid at the rate of one hundred dollars per annum, for receiving complaints, issuing warrants, and trying cases under the FORTY-SECOND CHAPTER OF THE GENERAL STATUTES.

SUPERINTENDENTS AND INSPECTORS.

SEC. 17. The salary of the *Superintendent of Streets* shall be at the rate of eighteen hundred dollars per annum.

SEC. 18. The salary of the *Superintendent of Public Buildings* shall be at the rate of sixteen hundred dollars per annum, and he shall furnish a horse and carriage for the use of himself and the men under his charge, and shall engage in no other business or calling.

SEC. 19. The salary of the *Superintendent of City Scales* shall be sixty per centum of the fees

received by him per annum, and he shall settle with the Treasurer monthly. The Mayor and Aldermen shall fix the salary of said Superintendent when he and the Measurer of Wood and Bark are one and the same person, at the rate of two hundred dollars per annum, in which case he shall account for all fees received by him in an official capacity, and shall pay the same into the Treasury monthly.

SEC. 20. The salary of the *Inspector of Milk* shall be at the rate of twenty-five dollars per annum.

SEC. 21. The salary of the *Sealer of Weights and Measures* shall be at the rate of three hundred dollars per annum, and no fees shall be charged for any official duty he may perform.

ASSESSORS' DEPARTMENT.

SEC. 22. The salary of the *Chairman of the Board of Assessors* shall be one thousand dollars per annum; and the salary of each of the other Assessors shall be eight hundred dollars per annum; and the said Assessors shall make out and distribute the tax bills. The Assessors shall devote their whole time, from March 1st to October 15th, to the service of the City, and

shall engage in no other business or calling during that time. They shall jointly make a valuation of the real estate in the City, and enter the same in a book to be kept for mutual reference, the same to be done before entering upon a subdivision of their duties of assessing in May.

There shall be allowed this Department the sum of six hundred dollars for clerk hire, and the Board of Assessors shall choose two clerks, neither of whom shall be members of the Board, who shall act as office clerks, under the direction and control of said Board.

FIRE DEPARTMENT.

SEC. 23. The salaries of the several members of the Fire Department for the year beginning January first, one thousand eight hundred and seventy-four, shall be as herein mentioned, to be paid semi-annually, unless otherwise ordered.

The salary of the *Chief Engineer* shall be at the rate of fourteen hundred dollars per annum, payable monthly, which shall be in full payment for all services which may be required of him by the City Council; and he shall devote his whole time to the duties of his office,

That of the *Assistant Engineers* shall be at the rate of one hundred and twenty-five dollars per annum.

The *Secretary of the Board of Engineers*, who shall be a member of the Board, shall receive twenty-five dollars additional, which shall be in full payment for all the services which may be required of him by the Mayor and Aldermen, the Chief Engineer, and the Board of Engineers.

The *Foremen* and *Clerks* of the respective Hose, Hook and Ladder, and Steam Fire Engine Companies, shall be paid at the rate of one hundred dollars, each, per annum.

The *Stewards* of Hose Companies shall be paid at the rate of one hundred and thirty dollars per annum.

Said *Stewards* shall be members of the Companies for which they act, and said sums shall be in full payment for all their services as *Stewards* and *Members* of Companies.

Drivers of Steamers and Hook and Ladder Carriages, who shall perform all the duties of *Stewards*, shall be paid two dollars per day.

Engineers of Steam Fire Engines shall be paid at the rate of three hundred dollars per annum.

Assistant Engineers of Steam Fire Engines shall be paid at the rate of one hundred and twenty-five dollars per annum.

All other *Members* of Steam Fire, Engine, Hose, and Hook and Ladder Companies, shall be paid at the rate of ninety dollars per annum.

SEC. 24. Whenever any person in the employment of the City shall demand payment of his salary, or any part thereof, it shall be the duty of the Auditor and City Treasurer to deduct therefrom any and all sums of money due from such officer to the City.

IN COMMON COUNCIL, December 9, 1873.

Passed.

ALBERT A. HAGGETT, President.

IN BOARD OF ALDERMEN, December 9, 1873.

Passed.

FRANCIS JEWETT, Mayor.

A true copy. Attest:

SAMUEL A. MCPHETRES, City Clerk.

CITY DOCUMENT.

CITY OF



LOWELL.

ANNUAL REPORT

OF THE

Directors of the City Library,

FOR THE YEAR 1873.

CITY OF LOWELL.

IN COMMON COUNCIL, Dec. 23, 1873.

Read and accepted; sent up for concurrence.

GEORGE GARDNER, Clerk.

IN BOARD OF ALDERMEN, Dec. 23, 1873.

Received and read.

SAMUEL A. McPHETRES, City Clerk.

Daily Courier Print.

REPORT.

DIRECTORS' ROOM, CITY LIBRARY, }
Lowell, December 22, 1873.

To the City Council of Lowell:

The Directors of the City Library, in compliance with a city ordinance, herewith submit their annual report:

RECEIPTS.

Balance undrawn Jan. 1st, 1873.....	\$256 74
Appropriation.....	1,500 00
Balance of Dog Tax.....	2,142 86
Subscriptions.....	762 00
Catalogues and Supplements.....	58 70
Fines.....	29 55
Lost Books.....	23 65
<hr/>	
Total Receipts.....	\$4,773 50

EXPENDITURES.

Salary of Librarian	\$1,200 00
Books for circulation and reference.....	681 31
Blank Books and Stationery.....	21 44
Binding.....	126 32
Printing, (exclusive of catalogue).....	48 44
*New Catalogue	1,472 60
Postage and Expressage	5 15

*Extra for 1873.

Rent and heating.....	1,400 00
Gas and water.....	202 15
Wire screen.....	15 71
Sundries, (cleaning, &c).....	6 90
Gas fittings and labor.....	35 21
Umbrella racks.....	7 80
Glass and lettering for street lamp.....	16 10
<hr/>	
Total Expense.....	\$5,239 10
Total Receipts.....	4,773 50
<hr/>	
Deficit.....	\$485 60

The Directors regret that trusting too much to the known large balance from the Dog Tax, they have allowed themselves to spend more than the amount appropriated for the Library; and can only excuse themselves by stating the fact, that, on becoming aware that the catalogue bill exhausted the amount appropriated, they have not since purchased a book.

The amount expended for books it will be observed is comparatively small, (\$681.31) and the number of books added (464) less than the average, and the deficit chiefly caused by the completion of the catalogue at the close of the year, before any return could be had from the sale thereof.

The receipts of next year must have the benefit of the expenditure of nearly fifteen hundred dollars out of this.

The Directors have the pleasure of concurring with their predecessors in commendation of your Librarian, and congratulate you on retaining his ser-

vices, and on your recent action in regard to his assistant. This year almost twenty thousand more books have been delivered to subscribers than were delivered during the first year of his election to office, and fifty-five hundred more than in 1872.

They can also say with confidence that the patrons of the library show that there is an improvement in the taste of the reading public of Lowell, by the increased demand for a higher class of books than has been the case in former years

LIST OF DONORS TO THE CITY LIBRARY, 1873.	Vols.	Pamphlets.	Papers.
Allen, Nathan, M. D.....	1		
American Peace Society.....			12
American Unitarian Association.....		12	
Boston Public Library.....		6	
Bureau of Education.....	2	4	
Charlestown Public Library.....		1	
Cincinnati Public Library.....		1	
Clark, Hon. J.....	6		
Cobden Club.....		6	
Cook, Thomas & Co.....			5
Esty, Hon. C. C.....	11		
Evans, George, E. C. E.....	1		
Fall River Public Library.....		2	
Hartford Young Men's Institute.....		2	
Haskell, Elder S. N.....	1		
Holton Library, Brighton.....		2	
Huntley, Miss Maria.....	1		
Knox, Hon. J. J.....	3		
Leggett, Hon. D.....	7		
Librarian of Congress.....	1	1	
McPhetres, Samuel A., Esq.....	2		
Manchester Public Library.....		1	
Mercantile Library, N. Y.....		1	
Mercantile Library, Philadelphia.....		1	
Munsell, J.....		1	
Nevada, State of.....		1	
Newburyport Public Library.....		1	
Peabody Institute.....	1		
Providence Athenæum.....		1	
Richardson, Hon. Wm. A.....	2		
Sanborn, E. D., Dartmouth College.....		1	
Sargent, J. L., Esq.....	3	9	
Springfield Public Library.....	1		
Sumner, Hon. Charles.....		4	
Sweet & Co., N. Y. City.....			6
U. S. Patent Office.....		52	
Watertown Public Library.....		1	
White, A. J. A., Esq.....		1	
Worcester Public Library.....		1	
Young Men's Association, Buffalo.....		1	
Total.....	43	114	22

CONDITION OF THE LIBRARY.

Number of volumes added by purchase.....	464
Number of volumes added by donation.....	43
<hr/>	
Total.....	507
Number of volumes in Library.....	16,550
Lost and not paid for, 1873.....	12
Estimated value of same.....	\$8
New subscribers.....	669
Non-resident subscribers.....	29
Whole number subscribers, 1873.....	1,495
Whole number of books delivered, 1873.....	63,052
Average number daily.....	222

All of which is respectfully submitted.

FRANCIS JEWETT,
A. A. HAGGETT,
WM. HARDMAN,
E. BOYDEN,
J. D. PINDER,
JOHN A. G. RICHARDSON,
FREDERIC HOLTON,
DIRECTORS.

CITY DOCUMENT.

CITY OF



LOWELL.

ANNUAL REPORT

OF THE

CITY PHYSICIAN,

AND

SUPERINTENDENT OF BURIALS,

FOR THE YEAR 1873.

CITY OF LOWELL.

IN BOARD OF ALDERMEN, Jan. 27, 1874.

Read and sent to the Common Council.

SAMUEL A. McPHETRES, City Clerk.

IN COMMON COUNCIL, Jan. 27, 1874.

Received and read.

GEORGE GARDNER, Clerk.

Daily Courier Print.

REPORT.

OFFICE OF THE CITY PHYSICIAN AND }
SUPERINTENDENT OF BURIALS, }
LOWELL, January, 1874. }

TO THE CITY COUNCIL:

In accordance with the requirements of Chapter XI, Sec. 7, of the City Ordinances, I respectfully submit for your consideration the following report for the year 1873.

Among the noticeable features of the year is the no inconsiderable increase in the number of deaths over former years. There were eleven hundred sixty-one (1161) deaths, being an increase of one hundred and thirteen, or 10 $\frac{3}{4}$ per cent. upon the number in 1872. This increase in the death rate does not necessarily indicate that the sanitary condition of the city was worse than in previous years; for without doubt more attention than usual was paid towards keeping the streets and alleys in a healthful condition. The population is yearly increasing and the death rate will keep pace with it. It is estimated that the present population of Lowell is 50,000. Taking this as a basis, one person in every 46.06 died, or 21 in 1000.

Other unusual causes have contributed to swell the death rate. Several diseases assumed an epidemic form. In the early part of the year cerebro-spinal-

meningitis made its appearance in the city, and in February the first two deaths were reported from that cause. The largest number in one month was 9, in May. During the whole year 42 persons died from this disease, 18 males and 24 females, while in 1872 no death from it was reported.

Scarlet fever also assumed an epidemic form and in some localities was of a malignant type. Fifty-seven (57) deaths were reported against twelve (12) in the year 1872.

Another noticeable feature of the year was the unprecedented mortality during the week ending August 2, in which there were 53 deaths, the largest number in one week in the history of the city. Thirty-nine of these were under 5 years of age and the cause of death was chiefly cholera infantum. It is consoling to be able to account in these ways for the increased death rate of the year, and not be obliged to charge it to the presence of an unusual amount of filth in the city.

In the early months of the year while small pox was prevalent in Boston and other neighboring cities, a few cases made their appearance in this city, but each case was immediately removed to the hospital at the city farm; the localities where the disease appeared were disinfected, and every person exposed to the contagion was vaccinated. In no instance did the disease spread. During the year there were 8 cases and 1 death.

The Almshouse still maintains its reputation for the health of its inmates. While there has been the usual amount of chronic disease incident to the class of people who find shelter within its walls, scarcely any acute disease has made its appearance. During the year there were 8 deaths at this institution, 5 from consumption, and 1 each from cancer, heart disease and marasmus.

An unusual number of occasions have arisen during the year when the services of the city physician have been called for at the Police Station. Some are carried there sick for temporary shelter; others are prostrated after incarceration, while many insane persons are lodged there temporarily for the better security not only of themselves but of the public. And yet the place furnishes nothing better than an ordinary stone cell for the comfort of this class. In any new project for a building to contain the Police Court and Police Station, I would respectfully suggest that some provision be made where the sick can be temporarily placed away from the necessary confusion and excitement always present in a station house and where at least a modicum of comfort can be obtained. In many cities the police station is provided with one or more padded cells for securing the insane, in which it is impossible for them to do injury to themselves. Such a plan could be easily adopted in this city.

Among the causes of death were consumption, 207; cholera infantum, 82; inflammation of lungs, 80; infantile, 64; heart disease, 46; marasmus, 50; ty-

phoid fever, 56; accident, 14; drowned, 9; cancer, 16; apoplexy, 11; paralysis, 18, and old age, 35.

Six hundred and seventy-five (675) interments were made in the Catholic burying grounds, 89 in the cemetery, 294 in the other burying grounds of the city, and 103 bodies were removed from the city.

Annexed will be found various tables which explain themselves.

With much respect,

HERMON J. SMITH,

City Physician and Sup't of Burials.

TABLE 2.

DEATHS IN EACH MONTH FOR THE LAST TEN YEARS.

MONTHS.	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	Total for each month.
January,	52	45	72	71	65	72	87	89	66	82	701
February,	44	49	55	43	61	49	84	66	80	82	613
March,	60	39	61	52	79	62	73	72	89	86	673
April,	62	42	58	47	57	44	61	78	75	91	615
May,	54	37	61	41	45	54	58	77	94	82	603
June,	48	40	56	51	45	45	69	75	68	68	565
July,	56	59	72	58	76	70	116	119	137	153	916
August,	79	69	58	68	111	80	103	119	113	141	941
September,	47	43	67	57	78	74	76	135	114	119	810
October,	44	55	51	50	75	74	82	88	72	107	698
November,	49	44	72	56	84	64	70	54	69	65	627
December,	38	53	66	46	81	75	73	61	71	85	649
Total,	633	575	749	640	857	763	952	1033	1048	1161	

TABLE 3.

NUMBER OF DEATHS FROM SOME OF THE MOST PREVALENT DISEASES IN THE
LAST TEN YEARS.

DISEASES OR CAUSES OF DEATH.	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	Total.
Dropsy of Brain, - -	15	19	25	34	9	18	10	11	15	16	172
Cholera Infantum, - -	31	50	32	35	44	33	70	35	84	82	496
Consumption, - - -	153	123	128	146	156	147	151	168	225	207	1604
Croup, - - - - -	12	12	20	13	14	23	28	15	20	21	178
Disease of Heart, - -	8	15	24	13	32	15	38	26	35	46	252
Dysentery, - - - -	11	13	21	4	17	11	8	2	15	10	102
Infantile, - - - -	27	28	21	23	44	39	50	36	77	64	409
Inflammation of Lungs	37	24	25	34	42	31	46	54	58	80	431
Marasmus, - - - -	7	14	6	3	8	7	22	8	17	50	142
Scarlet Fever, - - -	17	26	2	15	95	42	10	32	12	57	308
Typhoid Fever, - - -	17	17	23	27	26	34	33	28	66	56	327
Diphtheria, - - - -	34	7	18	11	3	7	3	8	7	4	102

TABLE 4.

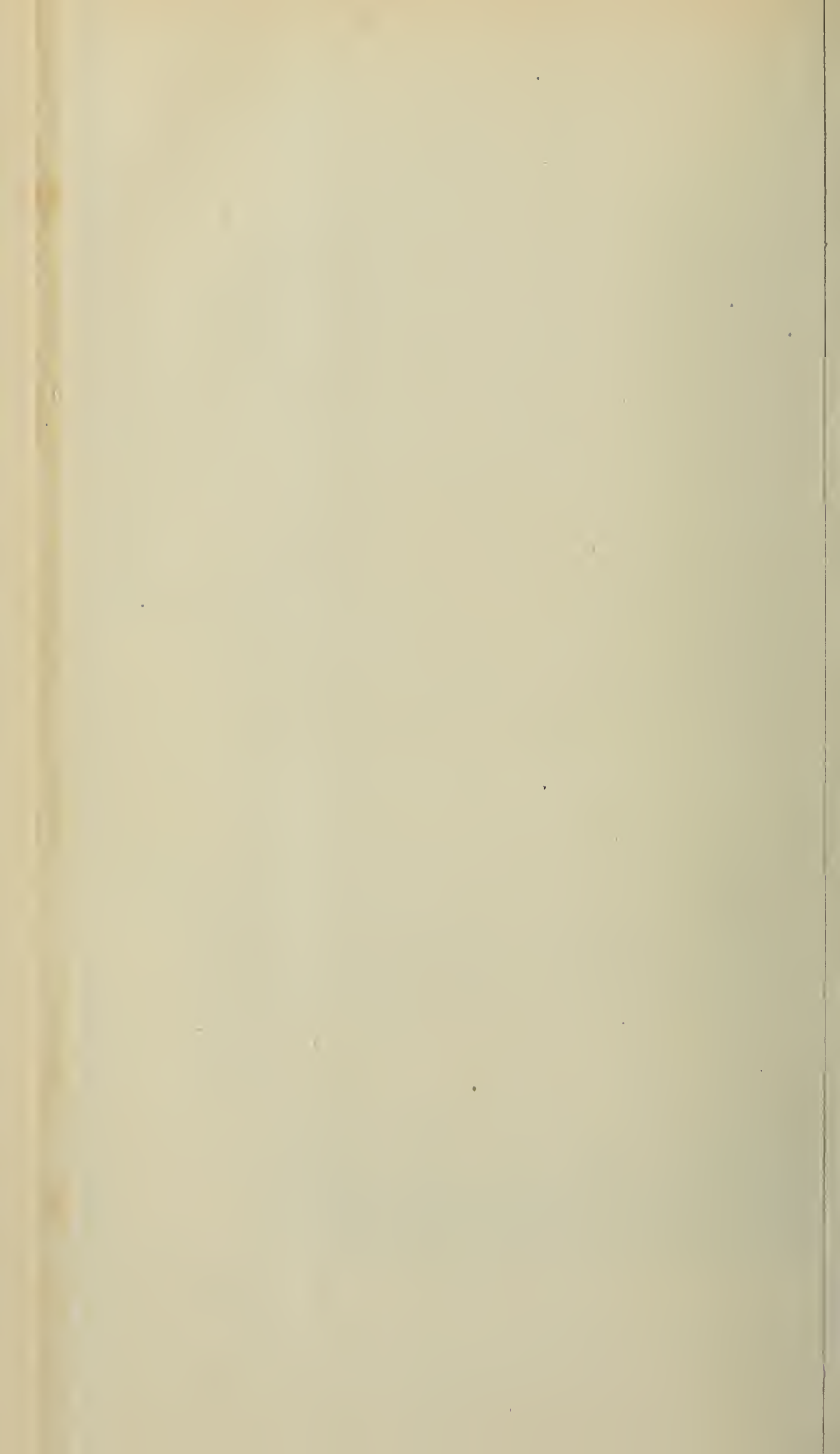
DEATHS IN LOWELL SINCE ITS INCORPORATION.

1827.....	50	1843.....	364	1859.....	739
1828.....	32	1844.....	362	1860.....	720
1829.....	66	1845.....	363	1861.....	713
1830.....	103	1846.....	690	1862.....	641
1831.....	117	1847.....	949	1863.....	695
1832.....	178	1848.....	825	1864.....	633
1833.....	211	1849.....	903	1865.....	575
1834.....	221	1850.....	492	1866.....	749
1835.....	229	1851.....	629	1867.....	640
1836.....	253	1852.....	604	1868.....	857
1837.....	301	1853.....	734	1869.....	763
1838.....	407	1854.....	834	1870.....	952
1839.....	340	1855.....	766	1871.....	1033
1840.....	407	1856.....	790	1872.....	1048
1841.....	434	1857.....	818	1873.....	1161
1842.....	473	1858.....	626		

TABLE 5.

NATIVITY OF THOSE DECEASED WITHIN THE YEAR 1873.

Born in the United States	816
Ireland	215
Canada	60
England	40
Scotland.....	10
Nova Scotia	4
Germany	1
Greece	1
Sweden	1
France	1
Unknown.....	12



CITY DOCUMENT.

CITY OF



LOWELL.

ANNUAL REPORT

OF THE

CHIEF ENGINEER

OF THE

LOWELL FIRE DEPARTMENT,

FOR THE YEAR ENDING MARCH 31, 1874.

CITY OF LOWELL.

IN BOARD OF ALDERMEN, April 1, 1874.

Read and placed on file.

SAMUEL A. McPHETRES, City Clerk.

Daily Courier Print.

REPORT.

CHIEF'S OFFICE, GOVERNMENT BUILDING, }
LOWELL, APRIL 1, 1874. }

To the Honorable Mayor and Board of Aldermen:

GENTLEMEN:—As required by the Ordinances of the City, herewith is submitted the Annual Report of the Chief Engineer of the Fire Department, for the year ending March 31st, 1874.

The Report embraces a complete register of the members of the Department, with number of badge, age, residence, and occupation of each. Also the apparatus in detail, with a list of signal boxes connected with the fire-alarm telegraph, the number of hydrants and reservoirs, with their location, being an enumeration of all property belonging to the Department, owned by the City. Also a full statement of the fires and alarms which have occurred during the past year, with the causes thereof, the loss and insurance as near as could be ascertained, together with such information and suggestions as are thought proper for your consideration.

The balance of the Appropriation for 1872, undrawn January 1, 1873, was.....	\$5,689 45
Appropriated for 1873.....	35,000 00
Received from other sources.....	824 02
	<hr/>
	\$41,513 47
Amount expended.....	37,309 91
	<hr/>
Balance undrawn Jan. 1, 1874.....	\$4,203 56

FIRES AND ALARMS.

The whole number of alarms for the year ending at this date has been fifty-six, at forty-one of which the services of the Department were required. In addition to the above number of regular alarms, there have been several still alarms, at which good service was done by members of the Department. We have had but one false alarm, although quite a number were given for slight causes.

The amount of loss by fires as near as could be ascertained, is \$157,063 00; upon which there is an insurance of \$97,508 00; making loss above insurance \$60,130 00.

Of the above loss and insurance \$14,500 00 was incurred at a fire in one of the mills on the Lowell Corporation. The recent burning of "Cook's Tannery" has added very much to our losses for the two years past, being as much as all the rest combined.

APPARATUS.

The apparatus consists of four steam fire engines, nine hand hose carriages, and one two-wheeled horse hose carriage with two hook and ladder carriages. Three of the steamers are in service, having hose carriages with companies attached. Five hand hose carriages are now in service, an additional company having been located in Centralville, who are now using one of the relief carriages. The two hook and ladder carriages are run by one company, responding to every alarm, the second carriage being sent for if needed. In addition to the above we have eight hose

reels on runners, seven of which were added during the past winter, thereby increasing the efficiency of the Department. Of hose we have 11,800 feet of 2½ inch leather, and 500 feet of 2½ inch rubber lined linen; also 1,200 feet of 2 1-4 inch leather hose, which is at stationary points, and used for jobbing purposes. The leather hose in service has recently been tested with hydrant pressure, and found to be in good condition, considering the time of service some of it has had. The rubber lined linen hose has given good satisfaction for the time we have had it, possessing as it does the desirable qualities of tenacity and lightness, being easily handled, it only needs the test of durability to make it superior to any other hose now in use. After testing the leather hose, all breaks, however small, were repaired, and I think it may be safely said that we have 12,000 feet of reliable hose. A small quantity should be purchased this season, to keep the above amount good.

During the past year three of the companies have been supplied with stop and spray nozzles, (Allen's Patent) which have proved to be quite servicable in preventing the destruction of property by water. The remainder of the Department should be supplied with similar nozzles. The steamers would need relief valves to make the stop nozzles available for them. Each company has been supplied with branch connections, which in some cases will enable them to put two streams upon a fire with a less amount of hose. The hydrant chucks have been altered to conform to the new hydrants, having now a five-inch

base, and carrying a reducer to connect with the old hydrants; also reducers to connect with post hydrants.

Torrent steamer, No. 2, has been thoroughly repaired by Hunneman & Co., during the past season. The hose carriages generally are in good condition; some of them need varnishing and slight repairs. The hose carriage run by the new company—Wellman Hose Co., No. 5—is heavy and unwieldy, and for the service which they are likely to perform a lighter carriage would be more desirable. I renew my recommendation of last year, “that a four wheeled horse hose carriage” be substituted for one of the carriages on Middle Street, which if done would supply a carriage for the Centralville company. The hook and ladder carriages should have more commodious quarters; that is, they should be located in a higher posted house so that the driver could get on his seat before leaving the house, thereby lessening the chance of accident to driver, horse and carriage. Moreover there should be two horses instead of one to draw the carriage, as now loaded, especially where it has to be taken beyond the pavements. Both of these results could be obtained by locating Steamer No. 1 with its hose carriage elsewhere, the steamer to be kept in reserve, then use the horses to draw the ladder truck, which could be located in the place made vacant. Then use the present hook and ladder horse to draw a hose carriage to be located in the Middle Street house. The growth of the city in the western part makes it desirable that a hook and ladder carriage should be located in the vicinity of Steamer

Two's house. This might be done by dividing the present company, taking one of the carriages and providing a suitable house.

Small Fire Extinguishers are being extensively used by the fire departments of the country, being carried on hose carriages, hook and ladder trucks, or in wagons kept for that purpose; and there is no doubt of their efficiency under certain circumstances. I suggest that a small number be procured for the use of the Department.

FIRE ALARM TELEGRAPH.

Another year's experience with the telegraph has served to increase its popularity and usefulness, and to confirm what its advocates claimed for it as being a valuable auxiliary to the Department. By its means much useless labor has been saved, and where the simple directions are followed by key-holders, it makes known with the greatest accuracy where the services of the firemen are required. Additional signal boxes are asked for in various localities.

WATER.

Extensions have been made by the Water Board of the water pipe on more than fifty streets, to the amount of 35,000 feet during the past year, hydrants being put in at suitable points, 67 having been added, making the whole number Jan. 1st, 1874, 459. Numerous connections have been made by which the supply of water to the hydrants is well assured. The hydrants have proved to be in good condition during the past winter. Suggestions have been made to the

Water Board in regard to the location of additional hydrants in the central portion of the city, which have been favorably received, and it is proposed this season to increase the number. On all extensions made, hydrants are put in about each three hundred feet, and it is economy to do so as it is cheaper to put in hydrants than it is to buy hose.

MANUAL FORCE.

The Department now consists of one hundred and thirty-four men, being twelve more than were appointed a year ago, the increase being caused by the appointment of a hose company for Centralville. The force consists of one Chief Engineer, who is employed permanently; five Assistant Engineers; three steamer companies, of thirteen men each; five hose companies of twelve men each; and one hook and ladder company of twenty-nine men, including the driver. The engineer of one of the steamers has charge of the fire alarm telegraph, and is permanently employed. The drivers, four in number, are permanently employed; and in addition to fire duty, perform such other labor as may be required, one of them having the past winter satisfactorily performed the duties of Superintendent of the Fire Alarm Telegraph, during the sickness of the Superintendent who was disabled while in the discharge of his duties.

Two years' experience as Chief, and a much longer period in subordinate positions leads me to the following conclusions, which I respectfully submit for your serious consideration:

That the appointment of members of the Department should be made to continue during good behavior, removable for cause at any time. That foremen of companies should be approved by the Board of Engineers and appointed by the Mayor and Board of Aldermen, to hold their positions until removed by promotion or otherwise.

A convention was held at Baltimore, Md., in the month of October last, of the Chief Engineers of fifty of the principal cities of the Union, at which matters of interest and importance were brought forward and discussed, and these conclusions were arrived at: "That the system of organization and discipline of all departments, whether under full pay, partial pay, or volunteer, should be made subservient to a thorough discipline tending to the actual duty of extinguishing fires." "That the terms of office for which the Chiefs and other executive officers of fire departments are appointed should cover as long a period as may be possible, and not be subject to removal for any cause other than unfitness or incompetency for the efficient discharge of the responsible duties assigned them."

CONCLUSION.

My intercourse with the members of the Department during the past year has been pleasant, and to each and all I return sincere thanks for the prompt response to demands made upon them for services.

Also to the Board of Engineers, to the Water Board, to the Superintendent of the Water Works, and to all other officials with whom I have come in contact, thanks are returned for many favors received.

Respectfully submitted,

GEORGE HOBSON,

Chief Engineer.

FIRE DEPARTMENT,

March, 1874.

CHIEF ENGINEER,

GEORGE HOBSON, Aged 48.

Residence, 24 Linden Street.

Office, City Government Building.

ASSISTANT ENGINEERS.

Badge.	Name.	Age.	Occupation.	Residence.
A	Charles H. Arlin,	46	Gas Fitter,	Perrin Street.
B	Samuel W. Taylor,	44	Carpenter,	172 Merrimaek Corp.
C	William W. Bates,	50	Tcamster,	Richmond Street.
D	*Hiram N. Hall,	45	Moulder,	Elliott Street.
E	Edward S. Hosmer,	36	Butcher,	2 Livermore Street.

*Secretary to Board of Engineers.

FOREMEN OF THE SEVERAL COMPANIES.

Badge.	Name.	Age.	Occupation.	Residence.
39	Henry W. Burton,	33	Carpenter,	25 Kirk Street.
49	Ruel F. Britton,	26	Grocer,	Steamer House.
59	Josiah W. White,	24	Merehant,	263 Central Street.
69	Cyrus E. Luscomb,	36	Painter,	23 Common Street..
81	George T. Anthony,	32	Carpenter,	32 Tilden Street.
94	James F. Norton,	34	Gas Fitter,	216 Central Street.
105	William King,	32	Boot Maker,	16 Fayette Street.
	James Armstrong,	30	Trader,	2 Bow Street.
11	William K. Doe,	53	Carpenter,	166 Merrimaek Corp.

HOPE STEAM FIRE ENGINE COMPANY, No. 1.

13 MEMBERS. HOUSE ON MIDDLE STREET.

Badge.	Position.	Name.	Age.	Occupation.	Residence.
39	Foreman,	Burton, H. W.	33	Carpenter,	25 Kirk Street.
42	Ass't Foreman	Lord, J. F.	31	Mason,	20 Fifth Street.
48	Clerk,	Charters, W. A.	23	Roll Coverer,	77 High Street.
1	Engineer,	Locke, J. J.	42	Machinist,	105 Central Street.
4	Ass't Engineer	Phelan, W. H.	38	Machinist,	Engine House.
7	Driver,	Lord, C. A.	29	Driver S. F. E.,	Engine House.
43	Hoseman,	Boyle, James	27	Carder,	86 Middlesex Street.
47	"	Brown, Lewis	21	Brass Finisher,	71 Middle Street.
45	"	Estabrook, Howard	28	Mason,	146 Suffolk Street.
46	"	La Mountain, J. L.	29	Carpenter,	11 Dodge Street.
41	"	Mason, A. A.	33	Manufacturer,	55 Merrimack Corp.
44	"	Stone, W. F.	28	Machinist,	Engine House.
40	"	Winslow, James	21	Dyer,	Engine House.

Apparatus and Property owned by the City, in care of this Company.

Steamer built by Union Machine Company, of Fitchburg, in 1870, has two double-acting steam cylinders 8 inch diameter, and 8 inch stroke, and two double acting pumps $4\frac{3}{8}$ inches diameter, arranged to work separately or together, weight when loaded, 7575 lbs.; 30 feet suction hose, with hydrant couplings; hose carriage, carrying 500 feet $2\frac{1}{2}$ inch leather hose; 1 two way chuck; 1 four way chuck; 1 branch connection; 4 couplings; 3 hat fronts; 2 hose pipes, with stop and spray nozzle; 6 lanterns; 2 small bars; 12 spanners; 1 hydrant wrench; 1500 feet of $2\frac{1}{2}$ inch leather hose; 13 silver badges; 2 axes; 1 pair horses; 1 pair harnesses; 4 blankets; 1 pair hoods; 1 horse hose sleigh; 3 beds and bedding; 1 bureau; 1 mirror; 18 cane seat chairs; 4 chairs; 1 table; and all tools needed for cleaning horses and repairs on engine.

TORRENT STEAM FIRE ENGINE COMPANY, No. 2.

13 MEMBERS. HOUSE ON MIDDLESEX STREET.

Badge.	Position.	Name.	Age.	Occupation.	Residence.
49	Foreman,	Britton, R. F.	26	Grocer,	Engine House.
50	Ass't Foreman	Leavitt, J. E.	25	Moulder,	41 Worthen Street.
58	Clerk,	Hartford, G. H.	22	Bobbin Maker,	60 Appleton Street.
2	Engineer,	Maddocks, George	28	Machinist,	12 Walnut Street.
5	Ass't Engineer	Hibbert, C. S.	26	Machinist,	53 Howard Street.
8	Driver,	Boynton, Henry	22	Driver S. F. E.,	Engine House.
52	Hoseman,	Stearns, A. C.	32	Cabinet Maker,	Engine House.
51	"	Abbott, John	24	Carpenter,	100 Middlesex Street.
53	"	Biggs, John	28	Carpenter,	12 Howard Street.
56	"	Coolidge, Martin	22	Moulder,	Engine House.
57	"	Hayward, William	23	Machinist,	18 Adams Street.
55	"	Hill, Joseph	23	Plumber,	90 Gorham Street.
54	"	Webster, Leander	24	Baker,	41 Worthen Street.

Apparatus and Property owned by the City, in care of this Company.

Steamer built by Hunneman & Co., in 1868, weight when loaded, 7720 lbs., similar to steamers 1 and 3; 30 feet suction hose, with hydrant couplings; hose carriage, carrying 500 feet of leather hose or 800 feet of lighter hose; 1 hose sleigh, given by citizens of Ward four; 1000 feet 2½ inch leather hose; 500 feet 2½ inch linen rubber lined hose; 1 axe; 1 two way chuck, 1 branch connection; 8 ladder straps; 14 spanners; 2 spare lanterns; 1 five-inch reducer; 4 reducing couplings; 1 goose neck; 3 hose pipes, with stop and spray nozzles; 75 feet ¾ inch rubber hose (old) and pipe; 3 hydrant wrenches; 2 small bars; 2 large bars; 1 jack screw; 1 pair of lead bars; 1 pair steps; 1 pair horses; 2 pair harnesses; 1 pair halter bridles; 1 coal wagon; 6 coal boxes; 1 wagon jack; 1 pair traverse runners; 4 blankets; 2 hoods; and all tools for cleaning horses and repairing engine; 12 arm chairs; 15 cane seat chairs; 1 stove; 1 copper boiler; 1 table; 1 bureau; 3 beds and bedding; 1 map of the City of Lowell; 1 large fire alarm gong.

WAMESIT STEAM FIRE ENGINE COMPANY, No. 3.

13 MEMBERS. HOUSE ON MIDDLE STREET.

Badge.	Position.	Name.	Age.	Occupation.	Residence.
59	Foreman,	White, J. W.	24	Merchant.	263 Central Street.
61	Ass't Foreman	Stackpole, J. H.	33	Manufacturer,	27 Stackpole Street,
67	Clerk,	Bowden, Frank	22	Carpenter,	30 Chestnut Street.
3	Engineer,	Stratton, T. E.	35	Supt. Fire Al. Tel.	14 Ames Street.
6	Ass't Engineer	Brown, E. L.	35	Machinist,	41 Merrimack Corp.
9	Driver,	Whitney, G. B.	27	Driver S. F. E.,	Engine House.
64	Hoseman,	Bailey, G. E.	23	Gas Fitter,	252 Central Street.
66	"	Going, George	22	Clerk,	98 Merrimack Street.
65	"	Hilliard, D. W.	23	Carpenter,	Engine House.
63	"	Hoyt, Frank	25	Cigar Maker,	98 Merrimack Street.
60	"	Little, E. J.	26	Machinist,	83 Prince Street.
62	"	Smith, A. B.	22	Machinist,	Engine House.
68	"	Stackpole, J. A.	27	Manufacturer,	6 Boott Corporation.

Apparatus and Property owned by the City, in care of this Company.

1 Steamer, built by Hunneman & Co., Boston, 1866, weight when loaded, 7650 lbs.; 30 feet suction hose, with hydrant couplings; hose carriage, carrying 500 feet $2\frac{1}{2}$ inch hose; 2 reducers; 2 axes; 1 stop-nozzle and pipe; 1500 feet of $2\frac{1}{2}$ inch hose; 18 cane seat chairs; 1 two-way chuck; 2 mirrors; 1 bureau; 3 beds and bedding; 2 jack screws; 2 horses; 2 pair harnesses; 4 blankets; 1 pair lead bars; 8 hat fronts; and all tools necessary for cleaning horses and repairs on engine. A hose sleigh has lately been added; 13 badges. The following articles are owned by the City, and used by both companies, Nos. 1 and 3: 2 whiffletrees; 1 large stove; 1 clock; 50 feet $\frac{3}{4}$ inch hose and pipe; 1 copper boiler; 1 fuel wagon; 1 pair runners; 1 large gong; 1 copper goose-neck.

OCEAN HOSE COMPANY, No. 1.

12 MEMBERS. HOUSE ON WARREN STREET.

Badge.	Position.	Name.	Age	Occupation.	Residence.
69	Foreman,	Luscomb, C. E.	36	Painter,	23 Common Street.
70	Ass't Foreman	Hanson, C. H.	29	Teamster,	Rock Street.
71	Clerk,	Cooper, S. G.	28	Copp'r Stamp m'r,	Hale Street.
72	Steward,	Doyle, William	58	Manufacturer,	5 Lawrence Street.
74	Hoseman,	Hanson, J. S.	36	Teamster,	11 Franklin Court.
76	"	Hunt, William	21	Carpenter,	17 Hurd Street.
79	"	Mason, G. E.	23	Painter,	9 Tilden Street.
75	"	McDermott, Michael	28	Machinist,	60 Middlesex Street.
77	"	Powers, J. H.	34	Manufacturer,	18 Market Street.
80	"	Simons, F. W.	22	Bill Poster,	105 E. Merrimack St.
78	"	Walton, A. C.	36	Manufacturer,	48 Mass. Corp.
73	"	Wilkins, F. A.	32	Painter,	112 Merrimack Street.

Apparatus and Property owned by the City, in care of this Company.

Hose Carriage, built by Hunneman & Co., Boston, in 1853, carrying 750 feet of hose; 1800 feet of 2½-inch leather leading hose; 6 reducing couplings; 25 feet of small hose; 1 hose sleigh; 12 spanners; 6 belts; 1 breast-plate harness; 1 two-way chuck; 1 branch connection; 2 hose pipes; 2 coal hods; 2 shovels; 1 broom; 2 stoves; 1 hand brush; 2 lanterns; 1 map city of Lowell; 1 settee; 2 buckets; 6 ladder straps; 1 spread nozzle; 2 wash basins; 2 pails; 1 hoe; 2 axes; 12 hat fronts; 12 badges; 1 head light; 1 feather duster; 1 coal sifter; 1 copper boiler; 1 set of rollers for hose sleigh; 1 watering pot; 1 carriage jack; 23 chairs; 2 mirrors; 1 hydrant wrench; 1 fire alarm gong.

REPORT OF THE
MECHANICS HOSE COMPANY, No. 2.

12 MEMBERS. HOUSE ON CROSS STREET.

Badge.	Position.	Name.	Age.	Occupation.	Residence.
81	Foreman,	Anthony, G. T.	32	Carpenter,	32 Tilden Street.
86	Ass't Foreman	Pierce, J. A.	25	Door Maker,	36 Rock Street.
91	Clerk,	Johnson, C. R.	24	Coppersmith,	5 Oliver Street.
85	Steward,	Osgood, F. W.	25	Machinist,	36 Franklin Street.
92	Hoseman,	Burke, A.	27	Blacksmith,	Dummer Street.
82	"	Douglas, E. W.	22	Painter,	4 Franklin Street.
88	"	Green, C. D.	28	Carpenter,	Fletcher Street.
84	"	Griffin, A. M.	39	Carpenter,	63 Rock Street.
83	"	Roberts, W. P.	25	Machinist,	22½ Cabot Street.
90	"	Salmon, E. A.	25	Bleacher,	Willie Street.
87	"	Wade, S. O.	21	Stone Cutter,	7 Perrin Street.
89	"	Webster, B. E.	28	Carpenter,	Broadway.

Apparatus and Property owned by the City, in care of this Company.

Hose Carriage, built by Juckett & Freeman, Boston, 1869, carrying 750 feet of hose; 1600 feet of 2½ inch hose; 6 arm chairs, 12 cane seat chairs; 4 reducing couplings; 2 hose pipes, one with spray nozzle; 50 feet ¾ inch rubber hose and pipe; 1 carriage jack; 2 settees; 1 mirror; 1 axe; 2 ladders; 1 two-way chuck; 2 stoves; 12 hat fronts; 1 broom; 2 shovels; 1 fire shovel; 1 wash dish; 12 badges; 6 lanterns; 5 spittoons; 1 mop; 1 branch connection; 12 spanners; 6 spanner belts; 7 ladder straps; 1 coal hod; 2 water pails; 1 wrench; 1 map of City of Lowell; 1 window brush; 1 hose sleigh; 1 hydrant wrench; 1 fire alarm gong.

EXCELSIOR HOSE COMPANY, No. 3.

12 MEMBERS. HOUSE ON CENTRAL STREET.

Badge.	Position.	Name.	Age.	Occupation.	Residence.
94	Foreman,	Norton, J. F.	34	Gas Fitter,	216 Central Street.
95	Ass't Foreman	Meloy, William	29	Blacksmith,	29 Summer Street.
102	Clerk,	Costello, J. E.	23	Gas Fitter,	121 Lawrence Street.
98	Steward,	Mack, Joseph	25	Gas Fitter,	12 Church Street.
104	Hoseman,	Allen, Thomas	22	Machinist,	32 William Street,
99	"	Collins, M. F.	23	Blacklayer,	21 Charles Street.
100	"	Cunningham, E.	26	Gas Fitter,	30 Church Street.
96	"	Emerson, Jeffrey	28	Plasterer,	23 Floyd Street.
103	"	Hardy, Frank	31	Operative,	6 Mass. Corp.
101	"	Ford, J. T.	23	Clerk,	12 Church Street.
97	"	Kerwin, E. D.	23	Gas Fitter,	115 Gorham Street.
93	"	White, William	22	Operative,	32 William Street.

Apparatus and Property owned by the City, in care of this Company.

Hose Carriage built by Jucket & Freeman, Boston, carrying 750 feet of hose ; 1 hose sleigh ; 1500 feet $2\frac{1}{2}$ inch hose ; two hose pipes with patent nozzles ; 3 hand lanterns ; 1 axe ; 1 two-way chuck and reducer ; 4 reducing couplings ; 3 iron bars ; 10 spanners ; 4 ladder straps ; 4 buckets ; 1 branch connection ; 4 ladder ropes ; 1 monkey wrench ; 6 hat fronts ; 13 cane seat chairs ; 7 chairs ; 2 settees ; 4 iron spittoons ; 1 large table ; 1 stove with funnel ; 1 copper boiler ; 1 mirror ; 1 step ladder ; 1 shovel ; 1 wooden shovel ; 1 small shovel ; 1 coal hod ; 1 coal sifter ; 1 carriage jack ; 1 hydrant wrench ; 1 pail ; 1 whiffletree ; 25 feet $\frac{3}{4}$ inch rubber hose with pipe ; 1 two horse pole ; 12 silver badges ; 1 fire alarm gong ; 1 map of the City of Lowell.

MAZEPPA HOSE COMPANY, No. 4.

12 MEMBERS. HOUSE ON FAYETTE STREET.

Badge.	Position.	Name.	Age.	Occupation.	Residence.
105	Foreman,	King, William	32	Boot Maker,	16 Fayette Street.
106	Ass't Foreman	Halstead, W. H.	30	Wool Sorter,	High Street Square.
107	Clerk,	Meredith, Edward	33	Painter,	14 Fayette Street.
111	Steward,	Harrington, Jere.	24	Laborer,	58 Fayette Street.
114	Hoseman,	Halstead, J. W.	25	Wool Sorter,	13 Alder Street.
109	"	Hussey, Geo. R.	43	Moulder,	33 High Street.
115	"	McSorley, Christopher	30	Laborer.	24 Fayette Street.
110	"	Meloy, Edward	28	Piper,	Fayette Street.
108	"	Morse, Charles	33	Finisher,	Howe Street.
112	"	O'Brien, Richard	23	Mason,	E. Merrimack Street.
113	"	Quinlan, John	22	Machinist,	6 Fayette Street.
116	"	Wyman, George	23	Mason,	8 Fayette Street.

Apparatus and Property owned by the City, in care of this Company.

Hose Carriage, built by J. J. Wright & Co., of this city, carrying 750 feet of hose; 1 hose sleigh; 1600 feet of 2½-inch leather hose; 1 two-way chuck; 30 feet ¾-inch rubber hose and pipe; 12 silver badges; 1 clock; 1 mirror; 1 hydrant wrench; 12 hat fronts; 12 spanners; 2 stoves; 1 table; 1 step ladder; 1 branch connection; 3 hose pipes and nozzles; 4 reducing couplings; 2 bars; 1 pump; 2 monkey wrenches; 1 whiffletree; 6 ladder straps; 1 copper boiler; 5 lanterns; 1 signal lantern; 25 chairs; 1 settee; 1 flag; 1 jack; 1 coal hod; 1 shovel; 2 axes; 12 hose belts; 1 water pail; 2 wash dishes; 1 broom; 1 map of the City of Lowell; 1 fire alarm gong.

WELLMAN HOSE COMPANY, No. 5.

12 MEMBERS. HOUSE ON FOURTH STREET.

Position.	Name.	Age.	Occupation.	Residence.
Foreman,	Armstrong, James	30	Trader,	2 Bow Street.
Ass't Foreman,	Merrill, Alphonzo.	38	Truckman,	17 Fifth Street.
Clerk,	Richardson, C. H.	29	Expressman,	Hampshire Street,
Steward,	Patten, G. W.	21	Florist,	Fourth Street.
Hoseman,	Bryant, C. A.	21	Civil Engineer,	Bridge Street.
"	Farrell, T. J.	23	Coachman,	Bridge Street.
"	Heald, A. W.	32	Truckman,	22 West Fifth Street.
"	McFarland, Oscar	28	Expressman,	27 Read Street.
"	McFarland, W. H.	21	Manufacturer,	27 Read Street.
"	Rodgers, Caleb	40	Grocer,	5 Fifth Street.
"	Sanborn, G. W. Jr.	24	Manufacturer,	7 Myrtle Street.
"	Whitney, Chas. H.	24	Truckman,	7 Myrtle Street.

Apparatus and Property owned by the City, in care of this Company.

This company was organized and put into service December 1st, 1873, and have not yet been supplied with badges.

Hose carriage, carrying 750 feet of hose; 1 hose sleigh; 1100 feet of 2½ inch leather hose; 1 35 foot ladder; 1 axe; 1 two-way chuck; 1 wrench; 2 reducing couplings; 1 branch coupling; 1 bar; 4 spanners; 2 lanterns; 1 stove; 2 settees; 2 brooms; 1 small shovel.

FRANKLIN HOOK AND LADDER COMPANY, No. 1.

29 MEMBERS. HOUSE ON MIDDLE STREET.

Badge.	Position.	Name.	Age.	Occupation.	Residence.
11	Foreman,	Doe, W. K.	53	Carpenter,	166 Merrimack Corp.
12	Ass't Foreman	Pearson, J. P.	35	Carpenter,	281 Central Street.
13	Clerk,	Lovejoy, Edwin	44	Grocer,	17 Andover Street.
10	Driver,	Foster, H. J.	24	Driver H. and L.	Engine House.
17		Adams, W. H.	49	Machinist,	21 Massachusetts Cor.
24		Bishop, Nathaniel	36	Spinner,	73 Boott Corp.
34		Briggs, Ansel	35	Manufacturer,	73 Merrimack Corp.
15		Clark, Ezra	47	Manufacturer,	36 Merrimack Corp.
31		Clough, H. H.	39		
35		Daggett, H. C.	49	Carpenter,	32 Massachusetts Cor.
18		Downs, H. B.	39	Carpenter,	47 Hamilton Corp.
20		Fuller, F. E.	25	Carpenter,	42 Hamilton Corp.
26		Healy, J. C.	44	Pattern Maker,	173 Merrimack Corp.
22		Hubbard, C. F.	44	Teamster,	14 Carpet Corporation
16		Ingalls, W. W.	50	Carpenter,	18 Lawrence Corp.
37		Joyce, J. H.	32	Moulder,	119 Central Street.
33		McCoy, John	38	Moulder,	75 Machine Shop Cor.
32		Norman, Rufus	47	Carpenter,	165 Merrimack Corp.
25		Palmer, Albert	55	Machinist,	12 Prescott Corp.
30		Pickman, David	50	Machinist,	4 Water Street.
21		Pullen, J. A.	46	Machinist,	161 Merrimack Corp.
36		Reed, George W.	—	Spinner,	51 Merrimack Corp.
38		Roberts, William	46	Teamster,	1 First Street.
14		Simmons, W. H.	48	Moulder,	57 Howard Street.
28		Stimpson, C. M.	47	Moulder,	44 Worthen Street.
23		Tilton, H. N.	29	Moulder,	3 Whipple Street.
29		Webber, S. F.	29	Blacksmith,	50 Hamilton Corp.
19		Welch, C. A.	49	Manufacturer,	70 Merrimack Corp.
27		Whitely, Joseph	31	Machinist,	1 Mason's Court.

Apparatus and Property owned by the City, in care of this Company.

2 hook and ladder trucks, carrying the following apparatus:
19 ladders of the following lengths: 2 butt ladders, 33 feet each;

2 tip ladders, 30 feet each ; by joining the tips and butts together, ladders 58 feet long can be raised ; 5 ladders, 33 feet each ; 2 ladders, 16 feet each ; 2 ladders, 12 feet each ; 1 ladder, 27 feet ; 3 ladders, 22 feet each ; 2 ladders, 12 feet each ; 150 feet 1 inch street rope ; 3 guy ropes, 80 feet each ; 7 hooks ; 7 props ; 7 pitch-forks ; 7 axes ; 5 rakes ; 2 sledges ; 9 lanterns ; 2 leather buckets ; 1 iron bar ; 1 monkey wrench ; 1 reducer ; 15 feet $\frac{3}{4}$ inch rubber hose and pipe ; 31 cane seat chairs ; 4 wooden chairs ; 1 clock ; 1 mirror ; 1 stove ; 1 copper boiler ; 1 broom ; 1 dust pan ; 1 table ; 1 coal sifter ; 2 towels ; 1 horse and harness ; 2 horse blankets ; 1 curry comb and brush ; 1 gallon oil can ; 1 light wagon for use in repairing telegraph.

ADDITIONAL FIRE APPARATUS.

RELIEF STEAM FIRE ENGINE.

HOUSE ON WARREN STREET.

No members attached ; in care of Steward of Hose Co., No. 1. On the rotary principle, 12-inch engine, 6-inch pump ; weight when loaded, 8300 lbs. ; 30 feet suction hose, with hydrant couplings.

ONE TWO-WHEELED HORSE HOSE CARRIAGE.

KEPT IN HOUSE ON WARREN STREET.

Has 400 feet $2\frac{1}{4}$ -inch hose on reel ; capacity of reel, 800 feet ; only used in case of emergency ; also, 400 feet of $2\frac{1}{4}$ -inch hose, not reliable.

ONE HAND HOSE CARRIAGE.

Used for relief purposes.

ROCKET ENGINE, No. 2.

HOUSE ON LINCOLN STREET, AYER'S CITY.

Hand Engine, built by Hunneman & Co., $5\frac{1}{2}$ -inch cylinders, 16-inch stroke; 20 feet suction hose; hose tender attached, with 300 feet of $2\frac{1}{4}$ -inch hose on the reel; also connections for new hydrants.

FIRE KING ENGINE, No. 6.

KEPT AT POOR FARM.

Small Hand Engine, built by Hunneman & Co., $3\frac{1}{2}$ -inch cylinder, 12-inch stroke; 300 feet 2-inch leather hose.

OTHER PROPERTY BELONGING TO THE
DEPARTMENT.

IN CHARGE OF CHIEF ENGINEER.

200 feet $2\frac{1}{4}$ -inch hose, attached to hydrant on Prescott Corporation; 17 post hydrants at pipe yard; lot of 6-inch water pipe; 3 telegraph poles; 2 trucks, used for hauling pipe; 1 new hydrant, $2\frac{1}{4}$ -inch; 2 hydrant covers; 2 copper goose-necks, and other tools for working on hydrants; 1 ten-gallon oil can; 2 tamping mauls; 1 pump for hydrant boxes; 1 hydrant pattern; 1 two-way chuck pattern; 2 reducer patterns; 1 chuck base pattern; 1 set dies for department badge; 7 fire buckets, now at steamer house, Middle Street, formerly kept at City Government Building.

RECAPITULATION.

1 Chief Engineer; 5 Assistant Engineers; 128 Firemen; 4 Steam Fire Engines; 2 Hook and Ladder Carriages, fully equipped; 9 Hand Hose Carriages; 1 Horse Hose Carriage, two-wheeled; 1 Hand Engine, with Hose Tender; 7 Hand Hose Sleighs; 1 Horse

Hose Sleigh; 12,300 feet $2\frac{1}{2}$ -inch Leading Hose; 1200 feet $2\frac{1}{4}$ -inch Leading Hose; 140 feet Suction Hose; 230 feet $\frac{3}{4}$ -inch Rubber Hose and 5 Pipes; 7 Horses; 2 Fuel Wagons and 1 set heavy traverse runners; 1 light Wagon; 1 $\frac{1}{4}$ Traverse Runner Sleigh; 10 Double Harnesses; 2 Single Harnesses; 121 Silver Badges; 53 Hat Fronts; 12 Axes; 30 Reducing Couplings; 7 5 to $2\frac{1}{4}$ -inch Reducers; 8 Two-way Chucks; 1 Four-way Chuck; 8 Two-way Branch Connections; 7 Spray Nozzles; 3 Stop Nozzles; 6 Copper Boilers; 5 Jack Screws; 1 Ladder for Telegraph Repairs; 9 Bedsteads and Bedding; 175 Chairs; 30 Settees; 9 Mirrors; 12 Stoves; 9 Tables; 3 Bureaus; 12 Horse Blankets; 8 Maps of the City of Lowell.

Each Company is furnished with spanners, lanterns, axes, crowbars, wrenches, shovels, and all tools necessary for performing their duties. Tools suitable for keeping the lines in repair, are kept at the Telegraph Room, in charge of the Superintendent.

FIRE-ALARM TELEGRAPH.

AUTOMATIC REPEATER WITH BATTERY.

SUPERINTENDENT, TORREY E. STRATTON.

Office, Steamer House, Middle Street.

Number of Miles Wire,	16
“ “ Signal Boxes,	32
“ “ Small Gongs,	6
“ “ Large Gongs,	2
“ “ Strikers,	6

One small gong is in the Chief's house, one in the house of First Assistant Engineer, and one (private property) in the house of the Superintendent of the Fire Alarm Telegraph, also one in each of the first four hose houses. The large gongs are in the steamer houses on Middle and Middlesex Streets.

The strikers are located as follows: Alarm bell, Armory Building, Market Street; St. Mary's Church, Suffolk Street; Franklin School House, Middlesex Street; Court House, Chapel Hill; High Street Church, East Merrimack Street; Varnum School House, Centralville.

The standard time is struck at 1 o'clock, each day, by J. Raynes & Co., from their jewelry store, No. 43 Central Street.

CARRIAGES RESPOND TO THE FOLLOWING BOXES ON A FIRST ALARM.

Steamer 1,—6^H, 7^H, 8^H, 12^H, 13^H, 14^H, 17, 21^H, 23, 25^H, 26, 32, 35^H, 36, 42^H, 52, 53^H, 61, 62, 63.

Steamer 2,—3^H, 4, 5, 8, 15, 17, 24^H, 26^H, 34, 42^H, 43, 51, 62, 63, 64.

Steamer 3,—3, 4, 5, 6^H, 7^H, 12^H, 13^H, 15^H, 16, 21^H, 23, 25^H, 31^H, 32, 36, 41, 51, 52^H, 61.

Hose 1,—12, 13, 14, 15, 16, 21, 24, 31, 35, 41, 43, 51, 53, 61.

“ 2,—3, 4, 5, 6, 7, 8, 17, 25, 26, 34, 42, 52, 62, 63, 64.

“ 3,—4, 5, 15, 16, 24, 34, 35, 42, 43, 51, 53, 61, 63, 64.

“ 4,—7, 12, 13, 14, 16, 21, 23, 31, 35, 41, 53, 61.

“ 5,—12, 13, 21, 23, 31, 32, 36.

Numbers marked H, hose carriages *only*, respond.

FIRE ALARM—LOCATION OF SIGNAL BOXES.

- No. 3, Corner of Broadway and Mt. Vernon streets, Carey & Harris' shop.
- " 4, Dutton street, on building opposite Parker & Cheney's.
- " 5, Corner Rock and Fletcher streets, Liberty square.
- " 6, Corner Little and Lewis streets, Mann School House.
- " 7, Corner Market and Dutton streets, Plunkett's store.
- " 8, Corner Westford and School streets, on pole.
- " 12, Market street, Police Station.
- " 13, Corner Prescott and Merrimack streets, Stevens' Block.
- " 14, Corner Fayette and Andover streets, brick block.
- " 15, Bleachery street, Bleachery stable.
- " 16, Hosford square, on pole.
- " 17, Corner Middlesex and Walker streets, on pole.
- " 21, Corner Kirk and Merrimack streets, Welles' Block.
- " 23, Corner Coburn and River streets, on pole.
- " 24, South street, Ward Room.
- " 25, Merrimack street, Tremont House.
- " 26, Corner Fletcher and Pawtucket streets, on pole.
- " 31, Corner High and East Merrimack streets, on pole.
- " 32, Corner Bridge and Tenth streets, on pole.
- " 34, Lincoln street, Cook's Tannery.
- " 35, Corner Charles and Lawrence streets, on pole.
- " 36, Corner Third and Myrtle streets, on pole.
- " 41, Corner Wyman and Nesmith streets, on pole.
- " 42, Middlesex street, No. 2 Steamer house.
- " 43, Highland street, Edson School House.
- " 51, Davis' Corner, on pole.
- " 52, Corner Austin and Moody streets, Fox's stable.
- " 53, Tower's Corner, on pole.
- " 61, Lawrence street, above Stott's mill, on pole.
- " 62, Corner Bowers and School streets, on pole.
- " 63, Corner Hale and Howard streets, on pole.
- " 64, At Poor Farm, on pole.

One stroke dismisses, two call out the entire department.

Two strokes are struck, and repeated once, on very stormy days, to notify the teachers of the Public Schools that there will be but one session.

FIRES AND ALARMS FROM APRIL 1st, 1873, TO MARCH 31st, 1874.

DATE.	HOUR.	BOX.	LOCATION.	OWNER OR OCCUPANT.	LOSS.	INSUR- ANCE.	KIND OF BUILDING.	REMARKS.
Sat., April 19, 1873	5.45 P. M.	31	E. Merrimack Street,	White Brothers,	\$250	\$250	Wood Cottage.	Smoke from Sulphur Rooms. Over-heated chimney. Chimney.
Wed., " 30, "	7 A. M.	24	Pearl Street,	S. Byam,				
Mon., May 19, "	11.45 "	7	69 Market Street,					
Fri., " 23, "	"	13						
Sat., " 31, "	10 "	17	113 Merrimack Street	Lovejoy House,				Assistance supposed to be needed [in Boston
Sun., June 1, "	11.30 "	Still.	High Street,	Daniel Martin,		10		Slight fire on roof, sparks from chimney
Tues., " 3, "	1.30 P. M.	Still.	22 Broadway,	S. F. Henderson,		22		Slight fire on roof.
Wed., " 4, "	3.50 "	6	Moody Street,			14,500		
Mon., " 9, "	3 "	25	Lowell Corporation,	D. G. Holt,		213		
Tues., " 10, "	8.30 A. M.	12	Middlesex Place,					
Wed., " 18, "	2.20 P. M.	42	Quigley's Alley,					
Fri., " 20, "	4.40 "	7	B. & L. R. R. Shed,					Boys playing with matches. Over-heated chimney.
Thur., " 26, "	10 "	42	Boston Road,	T. Carolin,				Sparks on roof.
Sun., July 6, "	1 A. M.	31	E. Merrimack Street,	J. Tower,		517		Brush near Burial Ground. Over-heated chimney.
" " 6, "	11.50 "	52	358 Merrimack St.,	Swett,				
" " 6, "	"	52	"	E. B. Welch,		113		
Wed., " 16, "	6 P. M.	61	Tewksbury,					Brush. Tewksbury. Bed. Careless use of matches.
" " 23, "	8 A. M.	25	27 Tremont Street,	S. F. Brown,				Kettle of wax ignited. Cottage House, cause unknown.
Thur., " Aug 6, "	8 P. M.	53	143 Central Street,	George Green,				Chimney, over-heated. Incendiary.
Sun., " 10, "	1.30 A. M.	51&61	New Street,	H. Morrison,		20		Unknown. Second alarm. False.
Sat., " 16, "	12.30 P. M.	31	Green Street,	C. McManus,		16,000		Barn struck by lightning. Kettle of tar boiled over.
Mon., " 20, "	10.50 "	42	43 Davidson Street,	C. W. Saunders & Co.,				House belonging to H. Emery, had [1 long line.
Fri., " 25, "	1 A. M.	8	Middlesex Street,					
Mon., Sept. 1, "	1 A. M.	51&63	Congress Street,	Mrs. Joshua Swan,		1,375		
" " 8, "	4.20 P. M.	3	Fletcher Street,	P. Cumiskey,				
Sun., " 21, "	10.45 A. M.	52	Dracut,					
Thur., " Oct. 2, "	1.50 A. M.	52	143 Central Street,	S. F. Brown,				
" " 2, "	8.40 P. M.	61	Lawrence Street,	Taylor & Barker, and Wameet Power Co.,				
Sat., " 11, "	12.30 A. M.	63	Plain Street,	Chandler & Smith,		2,000	Charcoal Mill. 1 story brick & wd	Accidental. Unknown.
Thur., " 23, "	8.40 "	53	8 Union Street,	John Ames,				Unknown.
Sat., " 25, "	9.35 "	7	Market Street,	E. C. Leslie,				Carelessness. Clothing only.
Thur., " 30, "	1.30 P. M.	53	William Street,	Heirs of J. McCarty,				Unknown. Spontaneous combustion Lounge took fire from chimney.
Sat., Nov. 1, "	6.35 "	53	Green Street,					Over-heated chimney.
Thur., " 6, "	12.05 "	41	Nesmith Street,	Mrs. J. Nesmith,		525	Wood.	Over-heated furnace.
Fri., " 13, "	10.30 A. M.	20	Fawtucket Street,	P. Lawson,		570		

FIRES AND ALARMS—CONTINUED.

DATE.	HOUR.	BOX.	LOCATION.	OWNER OR OCCUPANT.	LOSS.	INSUR- ANCE.	KIND OF BUILDING.	REMARKS.
Fri., Nov. 14, 1873	7 P. M.	53	Gorham Street,	Z. Abbott, J. Meadowcroft, W. Hastings, A. J. Richardson, Lowell Wadding Co., Yarn & Wadding Co.,	275	275	Wood.	Chimney. Bed in attic. Unknown. Bed. Incendiary. Unknown.—Second Alarm. Unknown. Chimney. Hot lard boiled over on to the fire. Unknown.
Sat., " 15, "	3.45 P. M.	51	Cedar Street,					
Mon., " 17, "	8.30 "	61	Watson Street,					
Wed., " 19, "	10.20 A. M.	24	Spring Street,					
Sun., " 23, "	11.10 P. M.	25	Merrimack Street,					
Wed., Dec. 3, "	9.20 "	51	Congress Street,	Patrick Fay, Langley, Lowell Card Co., J. O'Grady, Litchfield & Co., P. F. Litchfield, Dora Boyle,	5,623 Slight.	4,166	Brick and Stone, " 10-footer. " "	
Sat., " 6, "	5.20 "	42	Middlesex Street,					
Fri., " 20, "	6.30 "	61	Lawrence Street,					
Sat., " 27, "	11 A. M.	26	Salen Street,					
Tues., " 30, "	2.30 P. M.	31	Wall Street,					
Wed., " 31, "	2.40 A. M.	21	Middle Street,	Mrs. M. B. Matthews, " Bennett Heirs," Owen Golding, Eagle Blk. H. Morrison Folsom & Tucker, E. G. Cooke, Hamilton Co.	975 1,000 12,165 Slight. 1,500 864 Slight.	975 1,000 8,331 861 864	Wood. Wood Block. Brick. Wood. " "	Closet containing women's clothing Took from stove funnel in potato car Chimney. Carelessness. Originated in cellar, near chimney. Caught f'm gas light in store window Sparks from chimney on roof. Unknown. Smoking pipe on bed. Chimney. Caught f'm gas light in store window Spontaneous combustion.—Sec. Alm. Ashes.
Thur., Jan. 8, 1874	11 "	53	Gorham Street,					
Sun., " 18, "	1.10 "	42	Dutton Street,					
" " 18, "	" "	42	" "					
" " 25, "	9.30 "	23	River Street,					
Mon., Feb. 2, "	5.30 P. M.	25	Fenwick Street,	Mrs. M. B. Matthews, " Bennett Heirs," Owen Golding, Eagle Blk. H. Morrison Folsom & Tucker, E. G. Cooke, Hamilton Corp.	700 Slight.	700	Store.	
Fri., " 13, "	9.50 A. M.	6	Adams Street,					
Sat., " 14, "	9.45 P. M.	Still.	Merrimack Street,					
Wed., " 18, "	1.50 "	24	Winter Street,					
" " 18, "	" "	Still.	Middlesex Street,					
Sun., Mar. 1, "	9.30 A. M.	53	Hurd Street,	Mrs. M. B. Matthews, " Bennett Heirs," Owen Golding, Eagle Blk. H. Morrison Folsom & Tucker, E. G. Cooke, Hamilton Corp.	200	200	Wood.	
Tues., " 10, "	1.45 P. M.	25	147 W. Market Street					
Thurs., " 12, "	8 "	42	Middlesex Street,					
Sat., " 14, "	" "	Still.	Merrimack Street,					
Thurs., " 20, "	7.20 "	34	Lincoln Street,					
Tues., " 31, "	10.00 A. M.	53	Hamilton Corp.					
					157,638	97,508		

Loss, \$157,638
Insurance, 97,508
Loss above Insurance, \$60,130

TABLE OF INSURANCE

FOR THE LAST TWENTY-TWO YEARS.

		LOSS.	INSURANCE.
Year ending March 31,	1852,	64,980	42,680
" "	" 1853,	73,593	53,543
" "	" 1854,	118,675	105,650
" "	" 1855,	37,000	25,900
" "	" 1856,	72,950	30,650
" "	" 1857,	78,925	26,725
" "	" 1858,	57,475	25,668
" "	" 1859,	38,150	27,300
" "	" 1860,	35,775	31,775
" "	" 1861,	20,875	6,750
" "	" 1862,	9,885	5,975
" "	" 1863,	40,541	48,261
" "	" 1864,	58,921	59,800
" "	" 1865,	196,437	97,313
" "	" 1866,	224,101	198,396
" "	" 1867,	73,819	30,034
" "	" 1868,	65,793	45,041
" "	" 1869,	81,665	55,315
" "	" 1870,	22,545	21,845
" "	" 1871,	31,550	24,100
" "	" 1872,	16,150	13,137
" "	" 1873,	157,638	97,508
Total,		\$1,577,443	\$1,073,366

RESERVOIRS.

There are 16 Reservoirs where water can be procured in case of fire, situated as follows :

- 1 on Tyler, corner of George street.
- 1 on Chestnut, corner of Willow street.
- 1 on Salem, intersection of Willie avenue.
- 1 on Cross, between Fletcher and Willie streets.
- 1 on Central street, Hosford square.
- 1 on Myrtle, at the head of Fifth street, Centralville.
- 1 on Union street, corner of Chapel street.
- 1 on the corner of Westford and Grand streets.
- 1 on Fourth, near Read street.
- 1 on Chapel street, corner of Keene street.
- 1 on Varney, near Mount Vernon street.
- 1 on the corner of Queen and Branch streets.
- 1 on the corner of Wilder and Middlesex streets.
- 1 on the corner of Bridge and Seventh streets.
- 1 on Howard, corner of Hale street.
- 1 on Forrest street (new; capacity 20,000 gallons).

HYDRANTS BY STREETS.

Ward No.	LOCATION.	Post.	Old Flush.	New Flush	Ward No.	LOCATION.	Post.	Old Flush.	New Flush
5	Adams street,	4	6		2	Fifth street,			2
3	Ames, half way bet.				2	First street,			4
	Central and Law.,			1	5	Fletcher street,			6
6	Andover street,			6	5	Ford street,			2
2	Anne street,			3	2	Fourth street,			2
4	Appleton street,			4	5	Franklin street,			1
5	Arlington street,			1	2	French street,	4		
6	Ash street,			1	4	Gates street,			1
6	Bartlett street,			2	3	George street,			1
3	Bleachery street,			2	3	Gorham street,			2
3	Bleachery, back of			6	4	Gorham street,	4		8
4	Branch street,		3	6	4	Grand street,			2
2	Bridge street,	3		8	4	Grove street,			2
5	Broadway street, 7		6	4	4	Hale street,			3
5	Butterfield street,			2	6	Harrison street,			1
5	Cabot street,	3	1		6	High street,			5
3	Cady Street,			1	4	Highland street,			2
4	Cambridge street,			1	4	Howard street,			6
3	Carter street,			2	6	Howe street,			2
3	Cedar street,			2	3	Hurd street,			2
2	Central street,		2		5	James street,			1
3	Central street,		12	7	3	Kidder street,			1
3	Chapel street,			6	2	Kirk street,	4		
3	Charles street,			3	3	Lawrence street,			6
6	Chestnut street,			2	2	Lee street,			1
3	Church street,			4	1	Lewis street,			2
5	Clark street,			1	4	Liberty street,			3
6	Clay street,			2	4	Lincoln street,			8
5	City Stable yard,		1		3	Linden street,			3
5	Common street,			4	1	Little street,			1
4	Coral street,			2	6	Mansur street,			1
3	Crosby street,			2	2	Market street,			3
5	Cross street,			6	1	Market street,			3
5	Cushing street,	6			5	Market street,			1
6	Davidson street,			2	4	Marshall street,			2
5	Dodge street,			1	2	Methuen street,			1
4	Dover street,			2	2	Merrimack street,	6		1
1	Dummer street,			1	1	Merrimack street,	3	4	
2	Durant street,			2	5	Merrimack street,	1	1	3
5	Dutton street,		1		2	Middle street,	1		4
3	Elm street,			3	4	Middlesex street,		14	11
6	East Merrimack street			4	5	Moody street,			6
6	Fairmount street,			1	3	Moore street,			6
6	Fayette street.			4	5	Mount Vernon street,			4
5	Fenwick street,			2	2	Myrtle street,			2

HYDRANTS—CONTINUED.

Ward No.	LOCATION.	Post.	Old Flush.	New Flush	Ward No.	LOCATION.	Post.	Old Flush.	New Flush
6	Nesmith street,			8	4	Thorndike street,			6
3	North street,			2	3	Tyler street,			3
6	Oak street,			1	3	Union street,			1
6	Park street,			1	5	Varney street,			3
5	Pawtucket street,			7	2	Vernon street,			2
2	Prescott street,			1	5	Walker street,			5
3	Prospect street,			1	4	Walker street,			4
4	Queen street,			1	3	Walnut street,			2
2	River street,			3	3	Wamesit street,			2
5	Rock street,			2	3	Wamesit Power Co.,			1
5	Salem street,			4	6	Water street,			3
5	School street,			6	3	Watson street,			1
4	School street,			2	5	Western avenue,	1		
2	Second street,			1	4	Westford street,			5
2	Seventh street,			1	2	West Fourth street,			2
2	Simpson street,			1	2	West Fifth street,			1
2	Sixth street,			4	2	West Sixth street,			4
4	Smith street,			2	4	West Union street,			1
4	South street,			3	5	Wilder street,			2
6	Stackpole street,			3	4	Wilder street,			2
5	Suffolk street,			4	5	Willie street,			1
4	Summer street,			6	4	Winter street,			1
2	Tenth street,			3	1	Worthen street,			2
2	Third street,			6					

SUMMARY BY WARDS.

Ward one,.....	16	Ward four,.....	117
Ward two,.....	82	Ward five,.....	110
Ward three,.....	85	Ward six,.....	49
		Plus Wards 1, 2 and 3,.....	183

Number of Hydrants now in use, 459

Number of Post Hydrants,	-	-	-	-	-	33
“ Old Flush Hydrants,	-	-	-	-	-	58
“ New Flush Hydrants,	-	-	-	-	-	368
Total,	-	-	-	-	-	459

FIRST ANNUAL REPORT

OF

THE WATER BOARD

OF THE

CITY OF LOWELL

To the City Council,

MADE JANUARY 1, 1874.

PRINTED BY ORDER OF THE CITY COUNCIL.



LOWELL, MASS.: •

STONE, HUSE & CO., PLAIN AND ORNAMENTAL PRINTERS, 21 CENTRAL ST.

1874.

In Board of Aldermen, January 13, 1874.

Read, and sent to the Common Council.

SAMUEL A. MCPHETRES,

City Clerk.

In Common Council, January 13, 1874.

Received and read.

GEO. GARDNER, *Clerk.*

WATER BOARD'S REPORT.

OFFICE OF LOWELL WATER BOARD, }
Thursday, January 1st, 1874. }

To the City Council of Lowell:

GENTLEMEN:—As required by the Fourth Section of “An Ordinance providing for the care and management of the Lowell Water Works,” passed July 11th, 1872, the Water Board would respectfully submit their first annual report, for the year 1873.

From January 1st until May 5th, the Water Works were under the control of the Water Committee.

April 8th, two citizens at large, Mr. Levi Sprague and Mr. W. F. Salmon, were elected by concurrent vote of the City Council, the former to serve for two years, and the latter for one year, and with the three members of the Water Committee, constitute the Lowell Water Board.

On May 5th the persons elected by the City Council to serve as members of the Lowell Water Board met, and organized by the choice of Levi Sprague as President, and F. H. Spalding as Clerk of the Water Board. On the same day S. P. Griffin was elected as Superintendent of the Water Works. Mr. I. N. Marshall, who had been serving the Water Committee as Clerk, resigned April 30th, to take the position of Local Freight Agent at New Bedford, Mass.

During the summer a large number of petitions were received from parties living in streets where the water pipes had not been laid, who were very anxious to be supplied with water. All of these

petitions have been granted, and the pipes laid where it was thought to be for the best interest of the city. To make these extensions a number of contracts for iron pipes had to be made, and are as follows :

April 5th. A contract was made with John McNeal & Sons for two hundred tons of coated cast-iron pipes, at \$73.50 per long ton, and fifteen tons of special castings, at $4\frac{7}{8}$ cents per pound, delivered in Lowell.

June 3rd. An agreement was made with J. W. Starr & Sons for seven 30-inch cast-iron pipes of different classes, at $3\frac{1}{2}$ cents per pound, delivered in Boston.

August 11th. A contract was made with R. D. Wood & Co., for two hundred and twenty tons of cast-iron pipes, at \$63.00 per ton, and ten tons of special castings at $4\frac{1}{4}$ cents per pound, delivered in Lowell.

A portion of the pipes of the last contract were to have been delivered by the 27th of August.

Having lost five or six weeks of fine working weather on account of the delay of Messrs. Wood in the delivery of their pipes, and the lateness of the season, we were obliged to make another contract, so that the extensions could be made before the winter set in; and accordingly, September 25th, a contract was entered into with John McNeal & Sons for four hundred tons of cast-iron pipes, at \$65.00 per ton, ten tons at \$67.00 per ton, and thirteen tons of special castings at $3\frac{7}{8}$ cents per pound, which was afterwards increased by the addition of twenty-five tons, at \$59.00 per ton, all delivered in Lowell.

We wish to acknowledge the promptness with which Messrs. McNeal delivered the pipes; and to state that some were received within two weeks from the time of giving the order.

Having a surplus of 24-inch pipes on hand, we sold in April, to the Boston Water Works, about thirty-eight tons at \$63.00 per ton, delivered in Boston.

The contracts made by the Water Commissioners, and closed during the year, with the dates of their completion, and the amounts paid this year, are as follows :

An agreement, or extension of contract No. 8, made with Geo. H. Norman, for pipe-laying, closed February 1st. Amount, \$2,460.62.

Contract No. 14, made with Geo. W. Pearson, for engine buildings, closed May 1st. Amount, \$8,462.03. There has also been allowed on this contract \$1,750.60, which is to be paid by the contractor for the engine.

Contract No. 15, made with Wm. H. Wiggin, for reservoir fences, closed May 1st. Amount, \$2,296.43.

Contract No. 16, made with Wm. G. Howe, for three gate-houses, closed May 1st. Amount, \$2,345.53.

Contract No. 7, made with Geo. H. Norman, for laying pipe conduit, distributing main, &c., closed October 1st. Amount, \$20,279.04.

Contract No. 10, made with Henry G. Morris, for pumping engine and boiler, has not been closed. There remains a reserve of \$6,400.00, which is to be paid at the end of twelve months after the acceptance of the engine.

During the last week in July the engine was tested by a Board of Experts, consisting of J. C. Hoadley, J. B. Francis and Wm. E. Worthen, to ascertain the capacity and duty of the engine. The contractor, Henry G. Morris of Philadelphia, had guaranteed to the city that the engine should pump into the reservoir 5,000,000 U. S. gallons in twenty-four hours, the lift to be about 157 feet; and also give a duty of 75,000,000 foot pounds. The engine pumped into the reservoir 5,594,040 gallons in twenty-four hours, and gave a duty of 93,002,272 foot pounds, without any deduction for ashes, which is greater than the guaranteed amount by 18,002,272 foot pounds, and by the terms of the contract the contractor has received \$3,600.45 in addition to the contract price of the engine.

It is expected that a detailed account of the trial will soon be given by J. C. Hoadley, Esq., Chairman of the Board of Experts. The engine came into the possession of the city in August, according to the terms of the contract; but the contractor is obliged to make all the repairs that may be necessary during one year after its acceptance.

The engine is in the charge of Mr. Noell, a gentleman of large experience, who has proved himself very faithful and efficient.

The house on West Sixth Street has been repaired, and is occupied by one of the men who is employed at the engine house.

The works have remained in excellent condition during the year, and required only a small expenditure to keep them in repair.

The number of leaks in the street pipes have been very few; not any of them of a serious nature, and no damage has been caused by them.

There have been four claims for land and right-of-way settled during the year, but there are several more claims remaining which the Board would have been pleased to have settled, provided satisfactory arrangements could have been made with the different parties. The claims of Alfred Brown and G. L. Willard, for right-of-way and damages, have been brought before the County Commissioners for settlement; but their decision has not yet been given.

The following is a list of names of the parties not yet settled with for land damages:

Filtering Gallery—Samuel Fay, Proprietors of Locks and Canals.

Brick Supply Conduit—Eliza D. Blood, Alfred Brown, G. L. Willard, Isaac Holden, Chas. Bodwell heirs.

Pipe Conduit—Proprietors of Locks and Canals, Henry Emery, Fisher A. Hildreth heirs, Chas. Kenney.

Reservoir—B. Cavanaugh.

Distributing Main—Proprietors of Locks and Canals, J. B. French.

There has been 34,783 feet of pipes, of different sizes, laid during the year. The street mains will have to be extended from year to year, to meet the demands of the rapid growth of the city.

The amount expended during the year to complete the works is	\$77,418 78
And the amount paid on account of extensions, service pipes and maintenance is	188,376 59

Making the total expenditure for the year (not including interest and discount),	\$265,795 37
--	--------------

The receipts, from all sources, amount to	66,333 59
---	-----------

Thus leaving a balance of costs amounting to	\$199,461 78
--	--------------

STATEMENT

SHOWING THE TOTAL COST OF THE WORKS TO JAN. 1, 1874.

Construction.

Total cost, including interest, to Jan. 1,	
1873,	\$1,266,766 44
Expenditures for year ending Dec. 31,	
1873,	77,418 78
	<hr/> \$1,344,185 22

Extension and Supply Account.

Total cost to Jan. 1, 1873,	\$13,150 62	
Expenditures for year ending Dec. 31,		
1873,	188,376 59	
	<hr/>	201,527 21
Interest,		78,030 00
Discount on bonds sold,		5,892 50
		<hr/>
Total cost,		\$1,629,634 93

Credit.

Total amount of credit, from various sources, to Jan. 1, 1873,	\$20,670 46	
Credit from construction account for year ending Dec. 31, 1873,	4,075 49	
Credit from supply acc't (including water rates), for year ending Dec. 31, 1873,	57,739 48	
Interest,	1,896 62	
H. F. Durant, land, amount not drawn,	2,622 00	
	<hr/>	\$87,004 05
		<hr/>
Making the net cost to Jan. 1, 1874,		\$1,542,630 88
		<hr/> <hr/>

The Board is highly gratified in being able to state that the results of the first year, as regards the number of water-takers, and the revenue derived therefrom, far exceed the expectations of everybody; and it is confidently expected that the works will be self-supporting in the course of a few years.

On account of the great trouble and inconvenience to many of the water-takers, and the annoyance given us, we would respectfully suggest to your honorable body that some arrangement be made

whereby the water tax be paid at this office, where all questions can be properly answered, and all complaints can be satisfactorily explained and adjusted; and also insure a prompt collection, or the immediate shutting off of the water where the parties unnecessarily delay the payment.

The Board have thus presented, as briefly as possible, the condition of the works, and the amount of work done; but for a more detailed account of the works, we would refer you to the reports of the Chief Engineer and Superintendent, which are annexed.

The Board wish to express their acknowledgment of the fidelity and faithful performance of duties of all connected with the works.

Respectfully submitted.

LEVI SPRAGUE,
W. F. SALMON,
J. P. FOLSOM,
N. C. SANBORN,
NATHAN W. FRYE,

Lowell Water Board.

ENGINEER'S REPORT.

OFFICE OF CHIEF ENGINEER, }
Lowell, Jan. 1st, 1874. }

To the Lowell Water Board:

GENTLEMEN:—The following report of the completion of the works, and their condition at the present time, is respectfully submitted.

During the year all the contracts made by the Water Commissioners, excepting the contract for the pumping engine, have been closed, which completes the original construction, and are as follows:

February 1st. Street pipe, extension of contract No. 8.

May 1st. Contract No. 14, engine buildings; contract No. 15, reservoir fences; contract No. 16, gate-houses.

October 1st. Contract No. 7, pipe conduit, distributing main, &c.

FILTERING GALLERY.

The filtering gallery continues to yield an abundant and very superior supply of water. It is some harder than the river water, which shows that a considerable part of the supply comes from the land side.

The following table of analyses of water was taken from a report made to the State Board of Health, by Prof. Wm. R. Nichols, of the Massachusetts Institute of Technology. (See Fifth Annual Report of the Mass. State Board of Health, 1874).

LOCALITY.	DATE.	Ammonia.	"Albuminoid Am- monia."	Solid Residue of ** Filtered Water.			Chlorine.	Sulphuric Acid.	Silica.	Alumina and Oxide of Iron.	Lime.	Magnesia.	Oxygen, cubic inches to the gallon.
				Inorganic.	Organic and Volatile.	Total.							
{ Merrim'k river, opp. { Inlet Chamber, " "	*Sept. 2, 1873, " 10, 1873,	0.0027 0.0027	0.0089 0.0060	1.03 0.91	1.35 0.84	2.38 1.75	0.08 0.06	0.20	0.29	†0.18	0.32	Trace,	†0.43
§§ " " " "	" 10, 1873,	0.0026	0.0058	1.05	1.07	2.12	0.07						***1.82
§§§ " " " "	Jan. 1, 1874,	0.0031	0.0058	1.45	1.17	2.62	0.12					Trace,	
Inlet Chamber, Gallery,	Sept. 2, 1873,	0.0008	0.0016	2.82	1.05	3.87	0.14		0.23	0.12	0.50	Trace,	
" " " "	" 10, 1873,	0.0008	0.0012	2.71	0.68	3.39	0.12	0.16	0.57	0.08	0.57	Trace,	†0.16
" " " "	Jan. 2, 1874,	0.0038	0.0022	3.04	0.70	3.74	0.15						***0.64
Engine House,	Sept. 2, 1873,	0.0012	0.0033	3.29	0.84	4.13	0.22						
Water as delivered in	July 10, 1873,	0.0012	0.0039	3.06	0.86	3.92	0.18						
Lowell,	Jan. 2, 1874,	0.0022	0.0020	3.67	0.72	4.39	0.18						***1.72

*The unfiltered water contains—Inorganic matter, - - 1.17

Organic matter, - - 1.40

Total, - - - 2.57

§ Taken 100 feet from shore, 1½ feet below surface.

†These determinations were made on the spot.

‡Trace of phosphoric acid.

***Filtered through filtering paper.

***These determinations were made in the laboratory.
§§§ Same locality, 6 feet below surface.
§§§ " " " " " "

A short test of the yield was made during the dry season of last summer, when it gave about three times the quantity of water that was being consumed. This was a very unfavorable condition for the gallery, for the land in the vicinity was rendered very dry by the long absence of rain, the continued pumping and the low state of the water in the river.

The yield in twenty-four hours was one hundred and fifty gallons per square foot of bottom area.

In making the estimate of the supply to be obtained from the gallery, a yield of two hundred gallons per square foot of bottom area in twenty-four hours was assumed, but this was to be at a time when the river was high, and too turbid to be directly drawn from.

December 20th the interior of the gallery was examined by means of a boat.

The masonry was found to be in excellent condition; there appears to have been no change in its form, and the top appears to be water-tight. At this time there was about two feet of water in the gallery, and the bottom could be seen perfectly well. All the springs that were seen came through the bottom, close to the side walls, and formed little crater-like mounds of fine sand; there was about the same number on the land side as on the side towards the river. There is no deposit excepting at the larger springs. No repairs have been required on this part of the works.

INLET GATE-HOUSE.

This building was completed last spring, and the grounds have been graded, and enclosed by a picket fence.

The float-rods of the self-operating gates have had additional guides attached to them, so that their working at the present time is quite satisfactory.

BRICK SUPPLY CONDUIT.

The water was drawn from the conduit December 15th, for the purpose of examination. The masonry throughout the whole length was found generally in good condition, although a few slight cracks were discovered in the top, running parallel with the axis, which are as

follows: One near station 13+50, one fifty feet in length near station 17+25 and another small one near station 18.

These cracks are so small in width that they are not of a serious nature, and will probably remain unchanged; but if they increase in width it will be necessary to prevent the sides from yielding.

The portion that was repaired last year, before the water was let on, has remained in excellent condition, and shows no signs of changing its shape.

The sides and roof of the tunnel remain in a firm state, and are quite free from percolation. On account of the greater width of the tunnel, as compared with the conduit, the flow of water is much slower, which allows the sand to be deposited.

There is a small deposit of fine sand in different parts of the conduit, and a considerable quantity in the tunnel; but it was not deemed necessary to draw the water off to clean it out this winter.

IRON PIPE CONDUIT.

The iron pipe conduit, from the terminal chamber to the engine house, has required no repairs during the year.

The embankment west of Beaver Brook has been slightly washed. It was thought safe for the winter, but should be repaired after the spring freshet, and then rip-rapped to prevent future washing.

The water in the pipe under Beaver Brook was pumped out last June, and a considerable quantity of sand taken out. This is the first time it has been cleaned out since the water was let on.

ENGINE BUILDINGS.

The buildings were completed last spring, and remain in good condition.

Iron crestings have been put on the roofs of the engine house and boiler house, which greatly improve the general appearance. Two ornamental steam radiators, with marble tops, have been placed in the engine room, so that it can be heated when desired. The room has been furnished with a suitable number of chairs, writing desk, clock and barometer.

Four-inch and six-inch drain pipes have been laid from the house conductors to the street gutters; the grounds have been graded and

enclosed by a fence. The front of the lot, and about half of the side lines on Jewett and Hampshire Streets have a substantial iron fence set into a cut granite edge-stone, and the remainder has a board fence six feet in height.

The 18-inch cement sewer pipe in Bow Street, leading from the engine house to the brook, which was mentioned in last year's report, has been abandoned, except a portion of the lower end, where its depth below the surface of the street is small, which was found to be in good condition; and a brick sewer of twenty-four inches interior diameter substituted, by the Committee on Sewers. This was built as far as West Sixth Street, thus giving an opportunity to connect the wet well with the street sewer, so that the wells can be drained when necessary. The cement sewer was found to be in bad condition; most of the pipes were broken lengthwise into four pieces. The brick sewer in the street, and also the portion belonging to the Water Works, were built under the charge of J. C. Woodward, Superintendent of Streets.

The dwelling house on West Sixth Street has been shingled, and the grounds have been graded and fenced.

PUMPING ENGINE.

The engine has continued to supply the city with water in a very satisfactory manner, since its introduction in December, 1872. It is not required to be run more than three days each week, to keep up the demand.

A trial test of the engine was made in July, which continued through eighty consecutive hours, and the engine made 60,105 revolutions, or an average of 12.52 per minute. The quantity of water pumped into the reservoir, and measured over a weir, was at the rate of 5,594,040 gallons in twenty-four hours. The quantity, as estimated by taking the full capacity of the pump, was 5,806,719 gallons in twenty-four hours; which shows a loss of $3\frac{2}{3}$ per cent., due chiefly to the closing of the valves. The total amount of coal (anthracite) burned during the trial was 28,077 pounds, no deduction of any kind being made for ashes or clinkers.

The duty performed by the engine was 93,002,272 foot-pounds per hundred pounds of coal. By deducting the ashes and clinkers from the coal, the engine gave a duty of 100,567,100 foot-pounds per hundred pounds of combustion. The quantity of ashes and clinkers taken from the furnaces was nearly 11 per cent.

In November a small crack was discovered in the pump near the top of the man-hole passage, and has since been made secure by bolting. It was caused probably by a strain in the casting, and not from a lack of strength, for the casting at that place is $1\frac{3}{8}$ inches thick. At the time the crack was discovered the water in the reservoir was quite low, so the two donkey pumps were attached, at a trifling expense, to the street pipe, because it was not determined whether a new casting would be necessary, or how much time would be required to repair it. They were run day and night for nearly five days, and did excellent service.

When the engine is painted it will greatly improve its appearance.

May 15th the counter was attached to the engine, but previous to that time the quantity of water pumped had to be estimated approximately.

An abstract of the work done with the engine during the past year, is given in the following tabular statements:

T A B I E

Showing Work done with Engine and Boilers for each Month during the Year 1873.

MONTH.	DAYS.	Number of hours Pumping per month.	Number of Strokes made per month.	Average No. of Strokes per minute.	Quantity Pumped per month, in U. S. gallons.	Average quantity Pumped per day, in U. S. gallons.	Duty per 100 lbs. Coal per month.
January, . .	16	108 hours 25 min.	51,115	7.860	15,743,420	983,964	
February, . .	11	70 " 30 "	33,840	8.000	10,422,720	947,520	
March, . . .	5	32 " 0 "	16,905	8.805	5,206,740	1,041,348	
April, . . .	11	54 " 30 "	32,609	9.972	10,043,572	913,052	
May,	8	43 " 45 "	29,599	11.275	9,116,492	1,139,561	
June,	13	129 " 51 "	88,145	11.310	27,148,660	2,088,358	
July,	14	132 " 35 "	98,518	12.384	30,343,544	2,167,396	
August, . . .	6	49 " 25 "	36,258	12.228	11,167,464	1,861,244	86,054,412
September, .	18	108 " 30 "	71,336	10.958	22,111,990	1,228,444	89,014,190
October, . .	13	64 " 35 "	45,455	11.730	14,080,740	1,083,134	89,225,020
November, . .	9	51 " 25 "	32,337	10.480	9,932,230	1,103,581	96,848,590
December, . .	18	132 " 55 "	68,923	8.642	21,366,130	1,187,007	
	142	978 h. 26 m.	605,040	10.306*	186,683,702	1,314,674*	90,285,553*

* Average.

T A B L E

Showing the amount of Coal, &c., used at Pumping Station for each Month during the year 1873.

MONTH.	COAL CONSUMED.		Wood for starting fires, in cords.	Ashes and Clinkers taken from furnaces, in lbs.	Oil used, in gallons.	Tallow used, in lbs.	Cotton Waste used, in lbs.
	When pumping, in lbs.	For starting and banking fires, in lbs.					
January, .	371,400		8½		150½	97	41
February, .							
March, . .							
April, . . .							
May,	20,715	13,779	1½	4,388	12	18	6
*June, . . .	51,559	15,867	2	12,985	18	33	6
July,	55,889	10,559	1½	5,569	17	31	8
August, . . .	11,677	9,074	1	3,343	10	15	5
September, .	36,492	18,540	2	7,372	26	33	4
October, . . .	21,635	18,138	2	4,824	9½	33	4
November, . .	20,827	14,955	2	4,477	7½	33	4
December, . .	29,337	19,644	2	5,990	12½	35	5
	619,531	120,556	22½	.....	262½	328	83

*Used a large quantity of cinders during the month.

PUMPING STATION.

RUNNING EXPENSES FOR THE YEAR 1873.

Salaries of engineer and firemen,		\$2,161 66
Gas for lighting works,	:	40 96
370 tons (2000 lbs.) of coal consumed, α \$8.62 $\frac{2}{3}$,		3,191 87
22 $\frac{1}{8}$ cords of wood, " 7.68,		169 92
262 $\frac{1}{2}$ gallons of oil used, " .84 $\frac{2}{3}$,		222 47
328 lbs. of tallow used, " .10 $\frac{1}{3}$,		33 89
Packing—(hemp and rubber), "		42 14
83 lbs. of waste, " .20,		16 60
Repairs to donkey pump,		31 84
Sundries,		41 40
		<hr/>
		\$5,952 75
		<hr/>

Cost of raising water into reservoir, per million gallons, . \$31 88

Cost of raising water, per million gallons, one foot high, . 19 $\frac{4}{5}$

The total cost of coal for pumping, banking and starting fires, includes all the coal that was used for heating the building.

The engine is capable of pumping into the reservoir more than four times the quantity of water per day that it pumped last year; hence it can be readily seen that, as the quantity of water pumped increases, the cost per million gallons for pumping must necessarily diminish, for the principal increase of cost will be in the amount of fuel consumed.

The coal consumed the first four months of the year includes all that was used for heating the engine room by a large furnace. The cylinders and steam pipes were not covered until the middle of March, therefore a large quantity of steam was lost up to that time.

The duty is obtained from the coal consumed for pumping, and no deduction has been made for ashes or clinkers.

FORCE MAIN.

The force main has required no repairs during the past year, and no leaks have been discovered since the engine was started, and it is believed to be in perfect condition.

RESERVOIR.

The fencing of the grounds, which was commenced last year, was finished in the spring. The gate-house has also been completed and makes a very convenient and well-lighted building. The dwelling house has received some repairs; a six-inch drain pipe has been laid from the cellar to the westerly side of Beacon Street, and a well dug near the easterly end of the house. The house is now occupied by the keeper of the grounds. A flight of steps has been built leading from the foot to the top of the embankment opposite the gate-house, and a concrete walk has been laid from the street to the gate-house. The reservoir has become quite a place of resort, therefore some kind of a walk should be made on the top of the embankments, as they are very muddy after rains and while the frost is in the ground. Considerable grading has been done to the grounds and some slight repairs have been made to the outer slopes of the embankments, which were washed a little last spring.

The embankment near the gate-chamber, where a gap was left during construction, has settled a little, causing the slope paving to settle also. A portion of the slope paving on the north-east side, which settled before the water was let into the reservoir, caused by springs in its side, settled a little more last summer, but since then it appears to remain firm. Next season it will be necessary to relay the paving at these places. The remainder of the slope paving appears not to have changed, and is in good condition. The masonry of the gate-chamber is secure and sound.

The average depth of water in the reservoir since January 10th has been 16.62 feet, and the average number of gallons 24,985,900.

The following table shows the average depth of water, the number of gallons and the temperature of the water in the reservoir, and also the temperature of the air for each month in the year.

The temperature of the water was taken at 6, A. M., and 6, P. M., and the air at 6, A. M., 1, P. M., and 6, P. M.

1873.	Depth in feet.	Quantity in U. S. gallons.	TEMPERATURE.	
			Of Water.	Of Air.
January,	15.23	22,744,600*		
February,	15.73	23,531,000		
March,	14.99	22,355,600		
April,	14.23	21,149,100		
May,	14.87	22,174,400		
June,	13.78	20,455,400		
July,	17.09	25,739,800		
August,	18.84	28,733,300	73.2°	68.2°
September,	18.75	28,473,200	65.1°	60.4°
October,	19.52	29,771,100	58.3°	50.4°
November,	18.55	28,207,600	42.9°	28.1°
December,	17.85	26,995,300	40.1°	27.8°

*Since January 10th.

DISTRIBUTING MAIN.

The construction of the coffer-dam at Hunt's Falls, so as to complete the laying of the 30-inch main under the river, was commenced June 29th by the contractor, Mr. Geo. H. Norman, under the charge of his superintendent, Henry N. Wales. Most of the work on the dam had to be done nights and Sundays, when the water in the river was considerably lower than at other times. A large gang of men was employed, and by the 25th of July they commenced to lay some of the pipes. The dam was about 285 feet in length and enclosed the trench, which was kept so the men could work in it by the use of two large steam-pumps; but at times the water would come in and delay the work, and it was not until August 2nd that the pipe was laid above the level of the river. The bed of the river is composed of boulders and clay, which is underlaid by a stratum of quick-sand. The top of the pipe is laid about nine feet below the water and three feet below the river bottom, which takes it into the quick-sand. The portion above the

river was nearly as difficult to lay as that in the river, for the excavation was mostly quick-sand of an extremely fluid nature. The pipes were connected August 16th, making 433.6 feet laid; of this, 270 feet were laid below the river bed. The removing of the dam and the finishing of the back-filling, in September, completed the contract.

After the pipe had been cleaned out, the portion under the river was inspected by Supt. Griffin and myself; each joint being carefully examined, and found to be well made. The pipe having been blown off thoroughly, water was let into the city through it September 20th, and only one slight leak was discovered, and that was in the portion near Stackpole Street which was laid two years before.

The 12-inch pipe in Central Bridge, which had been used since the introduction of water as a supply main, was soon afterwards shut off, and is now held in reserve in case an accident should happen to the 30-inch main.

CANAL CROSSING.

The distribution which was separated by Pawtucket Canal at Central Street, and omitted last year, was connected in October by laying a 12-inch pipe under the canal. This pipe passes under the abutments of the bridge and about two and a half feet below the bed of the canal.

Near the south side of the wooden pier a two-inch cock is placed in the pipe for drawing off the water when necessary. The pipe at this place is strengthened by two heavy wrought-iron bands, placed each side of the cock.

This work was done by Supt. Griffin and his men, and had to be done entirely on Sundays, when the water was drawn from the canal.

It was originally proposed to suspend this pipe to trussed beams spanning the canal, but after farther examination it was thought best to lay it under the canal, as the cost of repairing in the future would be trifling.

CONNECTIONS.

On account of the lateness of the season at the time (Dec. 9th, 1872), the city had the right to connect the old and new systems of pipes, only such connections were made as to give better protection against fire, but during this last season all of the connections have been made excepting the following: Merrimack and Race Streets, Broadway at Fletcher Street, Middle and Central Streets, Worthen and Merrimack Streets, Middlesex and Pearl Streets and Middlesex and Garnet Streets.

The most important of these are at Race and Middle Streets, and should be so connected the coming season.

Respectfully submitted.

GEO. E. EVANS,

Chief Engineer.

CONSTRUCTION ACCOUNT.

EXPENDITURES FOR THE YEAR 1873.

IRON PIPE.

Jesse W. Starr & Sons,	\$1,062 57
Lowell Machine Shop,	134 85
Chelmsford Foundry,	100 30
	<hr/>
	\$1,297 72

PIPE LAYING.

Geo. H. Norman, \$16,922 68	Brought forward, \$17,418 07
Merrill & Calef, 350 16	O. A. Simpson, 55 62
D. G. Skillings, 44 09	Lowell Fire Departm't, 134 70
Runels & Davis, 51 20	Wm. Dobbins, 9 84
Lowell Felting Mills, 38 14	Geo. W. Pearson, 5 45
Jacob Rogers & Co., 5 20	Labor, 360 48
Jockow & Chamberlin, 6 60	
	<hr/>
Carried forward, \$17,418 07	\$17,984 16

RESERVOIR.

Merrill & Calef, \$944 98	Brought forward, \$1,499 55
John Donahoe, 242 25	Frederick Frye & Co., 46 28
N. Emerson, 227 10	Jacob Rogers & Co., 10 12
C. W. Saunders, 7 20	H. H. Wilder & Co., 4 42
Whithed & Tallant, 24 60	C. B. Coburn & Co., 50
N. T. Staples & Sons, 28 36	L. Kittredge, 25 50
O. A. Simpson, 24 00	Brown & Carter, 7 37
D. G. Skillings, 1 05	Labor, 708 29
	<hr/>
Carried forward, \$1,499 54	\$2,302 02

PIPE CONDUIT, DISTRIBUTING MAIN, &c.

Geo. H. Norman,	\$15,897 31	Brought forward,	\$16,062 59
Runels & Davis,	12 00	Merrill & Calef,	5 70
O. A. Simpson,	150 00	Lowell Fire Departm't,	10 00
Jacob Rogers & Co.,	78	Labor,	49 87
Tebbitts & Co.,	2 50		
			<u>\$16,128 16</u>
Carried forward,	\$16,062 59		

FILTERING GALLERY.

Merrill & Calef,	\$713 21	Brought forward,	\$740 86
Wm. G. Howe,	24 65	Labor,	66 00
Fire Department,	3 00		
			<u>\$806 86</u>
Carried forward,	\$740 86		

WATER GATES.

Boston, Lowell and Nashua Railroad,	.	\$ 4 64
Boston Machine Co.,	.	577 50
		<u>\$582 14</u>

ENGINE AND ENGINE HOUSE FOUNDATIONS.

Frederick Frye & Co.,	.	.	.	-	\$203 12
O. A. Simpson,	.	.	.	.	84 37
					<u>\$287 49</u>

ENGINE HOUSE.

Geo. W. Pearson,	\$10,847 70	Carried forward,	\$12,924 83
Frederick Frye & Co.,	74 75	S. G. Mack & Co.,	293 59
H. R. Barker & Co.,	449 98	Geo. A. Baker & Co.,	157 00
O. A. Simpson,	58 70	B. Riley,	43 00
Runels & Davis,	95 19	Tebbitts & Co.,	1 50
H. H. Wilder & Co.,	5 37	N. Emerson,	79 23
N. E. Linen Hose Co.,	118 25	C. W. Saunders,	34 50
Wm. Andrews,	1,194 45	Merrill & Calef,	5 86
Hallowell Bros.,	60 00	N. T. Staples & Sons,	33 92
Brown & Carter,	20 44	Labor,	756 62
			<u>\$14,330 05</u>
Brought forward,	\$12,924 83		

GATE HOUSES.

Wm. G. Howe,	\$2,345 53	Brought forward,	\$2,348 03
Merrill & Calef,	2 50	Brown & Carter,	28 85
			<u>\$2,376 88</u>
Carried forward,	\$2,348 03		

CONSTRUCTION ACCOUNT.

PUMPING ENGINE.

Henry G. Morris,	\$13,200 45	Brought forward,	\$13,412 21
Brown & Carter,	161 53	Runels & Davis,	39 73
D. G. Skillings,	39 75	H. H. Wilder & Co.,	3 88
Am. Steam Pack'g Co.,	10 48	Jonathan Kendall,	5 63
Carried forward,	\$13,412 21		\$13,461 45

GATE CHAMBERS.

Runels & Davis,	\$51 20
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RESERVOIR FENCES.

Wm. H. Wiggin,	\$2,419 48
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LAND AND DAMAGES.

H. G. Holden,	\$ 225 00	Brought forward,	\$2,616 58
Samuel Fay,	100 00	Patrick Cummiskey,	200 00
Francis Goward,	35 00	Ira Hall,	5 00
J. W. Peabody,	5 00	Abel Coburn,	5 00
Lund & Beacon,	1,424 54	Gayton Hall,	5 00
A. French,	15 00	Mary Murtagh,	203 20
Mrs. Van Valkenberg,	12 00	Chesley Brawn,	2,056 21
C. A. Savory,	25 00	T. H. Sweetser,	150 00
Gilman Kimball,	50 00	Walter Burnham,	25 00
Wm. Bass,	25 00	J. G. Favor,	29 46
L. Kittredge,	312 04	Mrs. A. Lew,	500 00
T. F. Fay,	380 00	R. H. Richards,	43 00
J. H. McAlvin,	8 00	Mid'x No. Dist. R'y Deeds,	21 57
Carried forward,	\$2,616 58		\$5,860 02

ENGINEERS' EXPENSES.

D. G. Leavitt,	\$ 6 00	Brought forward,	\$171 13
G. E. Evans,	26 75	Merrill & Calef,	2 00
F. P. Coggeshall,	14 88	C. B. Coburn & Co.,	38
Jas. P. Kirkwood,	123 50		\$173 51
Carried forward,	\$171 13		

ENGINEERS' SALARIES.

Geo. E. Evans,	\$2,500 00	Brought forward,	\$3,444 00
Frank A. Bayley,	734 00	Fred. W. Guest,	56 00
Chas. E. Haberstroh,	130 00	J. H. Shepard,	26 25
Ed. S. Davis,	80 00		\$3,426 25
Carried forward,	\$3,444 00		

SALARIES.

Levi Sprague,	\$666 67	Brought forward,	\$750 00
Wm. E. Livingston,	83 33	J. S. Holt,	66 67
Carried forward,	\$750 00		\$816 67

OFFICE EXPENSES.

Lowell Gas Light Co.,	\$ 3 30	Brought forward,	\$16 17
J. S. Holt,	12 87	Merchants' Nat. Bank,	262 50
Carried forward,	\$16 17		\$278 67

ENGINE TEST.

J. C. Hoadley,	\$388 75	Brought forward,	\$1,504 89
Wm. E. Worthen,	350 00	Prop's Locks & Canals,	272 25
Jas. B. Francis,	206 56	C. B. Coburn & Co.,	29 10
C. J. H. Woodbury,	147 00	H. R. Barker & Co.,	4 97
T. C. Porter,	102 10	Am. Steam Guage Co.,	3 00
Charles Smaller,	9 00	Jonathan Kendall,	12 15
J. Heywood,	2 00	G. W. Pearson,	65 57
Emery & Nute,	209 50	J. Raynes & Son,	25 00
Wm. Welch,	50 00	Jacob Rogers & Co.,	4 50
Geo. E. Evans,	32 98	John Sleeper,	102 00
H. O. Morse,	3 50	Tebbitts & Co.,	3 50
C. R. Kimball,	3 50	Buttrick & Co.,	3 50
Carried forward,	\$1,504 89		\$2,030 43

TOOLS AT ENGINE HOUSE.

J. Rogers & Co.,	\$18 15	Brought forward,	\$48 30
C. B. Coburn & Co.,	5 05	Merrill & Calef,	22 50
J. A. Knowles, Jr.,	25 10		\$70 80
Carried forward,	\$48 30		

FURNITURE AT ENGINE HOUSE.

F. P. Coggeshall,	\$ 55	Brought forward,	\$ 78 05
J. Rogers & Co.,	25 00	Adams & Co.,	81 00
G. T. Williams,	45 00	C. B. Coburn & Co.,	60
Nichols & Fletcher,	7 50		\$159 65
Carried forward,	\$78 05		

PRINTING.

Marden & Rowell,	\$ 41 50	Brought forward,	\$918 02
Knapp & Morey,	876 52	Stone & Huse,	27 00
Carried forward,	\$918 02		\$945 02

MISCELLANEOUS.

Benj. Goddard & Son,	\$ 15 00	Brought forward,	\$123 27
Prop's Locks & Canals,	108 27	H. H. Wilder & Co.,	110 18
Carried forward,	<u>\$123 27</u>		<u>\$233 45</u>

RECAPITULATION.

Iron Pipe,		\$ 1,297 72	
Pipe Laying,		17,984 16	
Reservoir,		2,302 02	
Pipe Conduit, Distributing Main, &c.,		16,128 16	
Filtering Gallery,		806 86	
Water Gates,		582 14	
Engine and Engine House Foundations,		287 49	
Engine House,		14,330 05	
Pumping Engine,		13,461 45	
Reservoir Fences,		2,419 48	
Gate Chambers,		51 20	
Gate Houses,		2,376 88	
Land and Damages,		5,860 02	
Salaries,		816 67	
Engineers' Salaries,		3,526 25	
Engineers' Expenses,		173 51	
Office Expenses,		278 67	
Engine Test,		2,030 43	
Tools at Engine House,		70 83	
Furniture at Engine House,		159 65	
Printing,		945 02	
Miscellaneous,		233 45	
		<u>\$86,122 11</u>	
Less pipe delivered to Superintendent,		8,703 33	
		<u>\$77,418 78</u>	
Deduct for pipe sold,	\$2,417 76		
Less freight,	74 77	2,342 99	
Deduct for barn sold,		104 50	
“ “ Centrifugal pump sold,		200 00	
“ “ labor for Geo. H. Norman,		157 59	
“ “ broken pipe sold,		245 06	
“ “ pipe sold,		950 60	
“ “ hair felting sold,		34 65	
“ “ pipe sold,		40 10	
		<u>\$4,075 49</u>	
		<u><u>\$73,343 29</u></u>	

SUPERINTENDENT'S REPORT.

To the Lowell Water Board :

GENTLEMEN:—In accordance with the requirements of the city ordinance, I respectfully submit the following Report, which embraces a statement of the work done under my charge, commencing August, 1872, and ending January 1st, 1874.

I was appointed to the position of Superintendent of the Lowell Water Works August 7th, 1872. On the 12th following, I commenced to get ready for laying service pipe. At this time nothing had been done towards this branch of the Works, consequently it took some little time to get men and tools ready for operation. But on the 25th of September following, we broke ground and commenced to put in service pipe, there being some 250 applications on the book, which number soon increased to 400. Continuing the work until December 10th, we then were obliged to suspend, on account of frost, until spring, except occasionally a service was put in for some party who had a favorable place to do the work and was suffering for the want of water. Early in the spring the demand for water was great, there being some 300 applications ahead. Two large gangs of men were put to work, and soon the old applicants were supplied. But the season being very dry, many wells gave out; many new houses were going up, all looking to the Works for their supply of water.

The applications came in fast, and continued to do so through the summer and fall until at the present time there have been put in the large number of 2276 services. These figures of services do not

show the amount or number of takers, as there are from one to twenty-four on a single pipe, which number will be given before the close of this Report. At the commencement of service pipe distribution, wrought-iron pipe lined with cement, was thought to be the best of anything that had been used for this purpose, there being a decided objection against the use of lead, although New York, Boston, Philadelphia and many other cities, both in this country and Europe, always have used, and now are using, lead and find no bad results from it. There are objections to cement-lined pipe, which I will only say at this time are mostly confined to the inconvenience of putting it in, and the extra expense of using a larger pipe in order to line it with the cement. Early last spring the Committee on Water Works substituted what is called vulcanized rubber coated pipe for the cement-lined, and since that time it is the only pipe used. Thus far it has proved all that was expected from it. In the use of it there is a saving over the cement of 10 to 15 per cent., with equal capacity. As to the durability of the coating, time alone will tell. Before using it, I had it severely tested with heat, cold, and the most powerful acids, all of which had no effect upon it. This is all that can be said in relation to it, at this time, more than that it promises well, and I see no reason why it will not prove all that is desired.

The amount of service pipe laid is 94,669 feet, or 17.93 miles.

“ Number of Services, 2276.

“ Number of Takers, 4435.

By these figures it is shown that the expectations of the most sanguine, in regard to the amount of water that would be taken, are more than realized. There are no complaints about the quality, except in cases where, after making connections, air gets into the mains and shows itself through the faucets in the houses. And I do not think it will be out of the way to state to the public, through this report, the following fact in relation to this matter, in order that they may feel perfectly safe in the use of it at these times, as I am aware that many do not use it for drinking purposes thinking something must be wrong, and that it would be injurious to health.

The fact is simply this: In making connections with the street mains we are obliged to make openings which allow air to pass into

the pipe or main and impregnate the water; and as air always seeks the highest point, it follows the service pipe into the house to find its natural outlet. The water at these times has a milky appearance, but upon drawing a tumbler of it and letting it stand for a few seconds, the air will be observed to commence at the bottom of the tumbler and immediately pass off, as in soda. It is perfectly harmless, and no fear need be exercised in its use, at these times. As necessity demands, we shall be obliged to make these connections from time to time, but no one need be discommoded on account of this appearance of the water, as it is generally conceded to be the best water used by any city in the country.

All the water that has been used by the city, since its introduction, has come through the Filtering Gallery, with the exception of the few hours it was drawn from the river during the test of the engine.

In the laying of service pipe I have given the preference to those who were building new houses and those who had no other adequate supply of water. In the principal business streets particular pains has been taken not to open but few trenches at a time, in order not to discommode business more than was actually necessary. In the laying of 94,669 feet, or 17.93 miles, there have been but two leaks, and those were caused by imperfect pipe which could not be tested. There has been but one case of freezing in the street, and that was by the pipe being too near a cess-pool.

The water was first let into the mains early in December, 1872, but it being midwinter care and caution had to be exercised in testing and blowing out the pipes, and it was not thought advisable to let water into the service pipes until January 10th following, at which time we began to let it in. There was comparatively little trouble with the service pipes during the winter; and with the exception of the blowing off of the cap at East Merrimack Street, and the blowing out of the wooden plug on Dutton Street, the mains gave very little trouble. The number of leaks in the mains that have been found, and fixed, up to this time, are twenty-one; all of which were in the joints except one, which was a split in the pipe.

There have been laid the past year, in connection with the service pipe, 3,498 feet of 4-inch ; 26,305 feet of 6-inch ; 4,022 feet of 8-inch $\frac{1}{2}$; 525 feet of 12-inch pipe, making in all 34,350 feet, or over 6 $\frac{1}{2}$ miles. To which add pipe laid previous to 1873, will make 189,556 feet, or 35.9 miles. This amount of mains, with the proportionate number of hydrants, gives the city a good protection against fire.

There have been twelve drinking fountains put in the following places :

Hosford Square.

Corner Middlesex and Gorham.

Middlesex, near Stott's Block.

Corner Market and Dutton.

Merrimack, near Post Office.

Andover, near Nesmith.

Monument Square.

Corner Pawtucket and Salem.

Corner Cabot and Merrimack.

Bridge, near Third.

Fletcher, near Willie.

Gorham, near Moore,

Besides nine drinking hydrants on the North and South Commons. These fountains have been a great accommodation to the public, and would now be considered almost indispensable. The running of them through the winter can be done, if mischievous persons will let them alone. I would, in connection with this part of the report, suggest to the Water Board the necessity of locating a much larger fountain at a point near the junction of Fletcher, Cushing and Adams Streets, as the present ones are not large enough for a large share of the travel that passes near this point. Also, that another be located at the east end of Monument Square, the one on the west end having been removed.

There have been made twelve connections with the 12-inch cement mains, at the following places :

Branch and Middlesex,

Central and Wamesit,

Central and North,

Central and Centre,

Central and Union,

Central and Cady,

Nichols and Branch,

Central and Tyler,

Central and Ames,

Central and Hurd,

Central and Elm,

School and Broadway,

Middlesex and South.

With regard to cement pipe for mains, I do not think it necessary to go into any details concerning its use, as it has only proved a troublesome expense, and its condemnation is shown in the refusal of the city to use any more of it.

The connections made with iron pipe are—

Market with Salem and Cabot, (at Cabot),	Gorham and Elm,
Merrimack and Cabot,	Merrimack and Anne,
Merrimack and Hanover,	Merrimack and John,
Merrimack and Tremont,	Gorham and Appleton,
Gorham and Charles,	Gorham and Union.

Also laid in Merrimack Street 36 feet of 12-inch pipe, connecting the old 12-inch main with the new, at Cabot Street.

Set one 12-inch gate in Merrimack Street, opposite Anne.

“ two 12-inch gates in Central, each side of Pawtucket Canal.

“ one 16-inch gate in Lewis, opposite Little.

The connecting of the 12-inch main in Central, at Pawtucket Canal, had to be made Sundays, on account of having to draw off the water, for which favor we are under obligations to J. B. Francis, Esq., also to Mr. C. J. Cheney, Superintendent of Locks and Canals, for valuable assistance rendered.

For particulars concerning the Reservoir, Filtering Gallery, Engine Buildings, Conduit, Tunnel, &c., I refer you to the report of the engineer, Mr. Geo. E. Evans.

The average daily consumption of water has been, from January 10th, 1873, to January, 1874, as follows:

January, . . . 308,777 gallons.	July, . . . *836,215 gallons.
February, . . . 373,437 “	August, . . . 588,634 “
March, . . . 327,321 “	September, . . . 571,621 “
April, . . . 356,148 “	October, . . . 531,022 “
May, . . . 430,301 “	November, . . . 480,646 “
June, . . . 569,770 “	December, . . . 591,202 “

*Wasting water during the test of the engine.

RECEIPTS.

The total amount of bills for the year ending December 31, 1873, sent to the City Treasurer for collection, for this department, is as follows :

Water rates,	\$39,168 64	
Service pipes and fixtures,	21,128 60	
Other sources,	4,435 29	
	<hr/>	\$64,732 53
		<hr/>
Amount collected by City Treasurer,		\$57,739 48
		<hr/>
		<hr/>

EXPENDITURES.

EXTENSION OF WORKS.

Iron pipe,	\$67,653 27	
Gates, hydrants and boxes,	8,622 47	
Labor and material,	28,629 70	
	<hr/>	\$104,905 44
Pumping and supplies,		8,492 66
Water Meters,		1,786 69
Laying service pipes, &c., labor and material,		63,431 20
New shop, stable and fence at pipe yard,		3,754 49
Salaries and office expenses,	4,297 04	
Printing, advertising and stationery,	709 04	
Repairing and furnishing office,	512 53	
Rent,	487 50	
	<hr/>	6,006 11
		<hr/>
		\$188,376 59
		<hr/>
		<hr/>

The total number of services on the first day of January, 1874, was 2,276, of which six are for fire only. The water has been turned on to 2,174, leaving 102 not yet turned on.

The total number of water takers on the first day of January was 4,435.

Water is now supplied for the following uses:

Families,	3,807	Pork packers,	2
Private stables, . . .	100	Private schools, . . .	2
Stores,	175	Wire goods manufactories,	2
Rooms,	123	Confectionery " . . .	3
Offices,	49	Vest "	2
Meat markets, . . .	28	Soda and Beer " . . .	2
Fish markets, . . .	5	Carriage "	2
Saloons,	25	Drain pipe manufactory,	1
Boarding houses, . .	24	Scale "	1
Apothecaries, . . .	16	File "	1
Gardens,	6	Belt "	1
Churches,	7	Cabinet "	1
Machine shops, . . .	7	Suspender "	1
School-houses, . . .	26	Soap "	1
Photograph saloons,	5	Frear stone "	1
Livery stables, . . .	7	Patent Medicine manufactory,	1
Printing offices, . . .	3	Glove "	1
Hose-houses,	3	Comforter "	1
Steamer-houses, . . .	2	Brewery,	1
Hotels,	6	Plumber,	1
Halls,	2	Mason,	1
Bakeries,	5	Bowling alley,	1
Steam and gas fixtures, .	3	Jail,	1
Hospitals,	2	Court-house,	1
Blacksmiths,	4	Post Office,	1
Barbers,	7	City Government building,	1
Banks,	6	City Library,	1
Railroads,	2	Police station,	1
Depots,	2	City workshop,	1

City stables,	1	Tannery,	1
Bleachery,	1	Marble works,	1
Hosiery,	1	Bath rooms,	1
Horse railroad stable, .	1		

The total number of fixtures is as follows:

Faucets,	6,358	Hose,	861
Sinks,	4,234	Private fountains,	4
Bowls,	536	Drinking fountains,	12
Bath tubs,	312	Drinking hydrants,	9
Water closets,	314	Horse troughs,	3
Set wash tubs,	196		

There are now twenty-four Water Meters in use, as follows:
 15 five-eighths inch, 3 three-quarters inch, 2 one inch, 3 two inch,
 1 four inch.

TOTAL AMOUNT OF SERVICE PIPE LAID TO JAN. 1st, 1874.

26,400 feet three-quarter inch, cement-lined.
 60,700 feet three-quarter inch, rubber-coated.
 667 feet one inch, cement-lined.
 4,546 feet one inch, rubber-coated.
 298 feet one and a half inch, tarred.
 2,019 feet two inch, tarred.
 39 feet two and a half inch, tarred.

Total in feet, 94,669

Total in miles, 17.93.

SCHEDULE No. 1.

SHOWING THE SIZES AND LENGTHS OF PIPES LAID IN THE
EXTENSION OF THE WORKS FOR THE YEAR
ENDING DECEMBER 31, 1873.

STREET.	BETWEEN WHAT STREETS.	LENGTH IN FEET.				TOTAL.
		4 Inch.	6 Inch.	8 Inch.	12 Inch.	
Arlington,	Bowers and Pawtucket,		624			624
Auburn,	Linden and Gorham,		292			292
Bennett,	Beacon and Vernon,		241			241
Bridge,	Tenth and March,		1223			1223
Broadway,	School and Pawtucket,		19	1622		1641
Bleachery Co.,	. . . . .		960	188		1148
Cambridge,	South from Hale	583	9			592
Clark,	Willie Ave. and West Clark,		509			509
Davidson,	Howe and East Merrimack,		796			796
Dover,	Middlesex and Westford,		633			633
Durant,	Third and Beacon,	732	22			754
Fenwick,	Suffolk and Market,		600			600
Fulton,	Mt. Vernon and Hosiery Co.,	244				244
Gates,	Westford, 562 feet south,	562				562
George,	Hurd and Church,		389			389
Grand,	Hale and Westford,		427			427
Grove,	School and Loring,		733			733
Hale,	Howard and Lincoln,		1520			1520
Howe,	East Merrim'k and Davidson,		75		}	241
Howe,	Davidson and Stott's Mills,		166			
Hurd,	Central and George,		669			669
Jefferson,	Market and Lewis,		361			361
Kidder,	Crosby and Gorham,		337			337
Lawrence,	. . . . .				228	228
Lincoln,	Gorham and Hale's Brook,		2732		}	3717
Lincoln,	Hale and Hale's Brook,		985			
Lewis,	Broadway and Market,		657			657

SCHEDULE No. 2.

LIST OF HYDRANTS SET FOR THE YEAR ENDING DECEMBER 31, 1873.

STREET.	LOCATION.
Arlington,	154 feet north from Bowers Street.
Bridge,	556.7 feet from Tenth Street.
Bridge,	Corner of March Street.
Broadway,	269 feet east from School Street.
Broadway,	619 feet east from School Street.
Cambridge,	561 feet from Hale Street.
Clark,	Corner Willie Avenue.
Davidson,	232.8 feet from East Merrimack Street.
Davidson,	155.8 feet from Howe Street.
Dover,	200 feet from Westford Street.
Dover,	600 feet from Westford Street.
Durant,	255 feet from Vernon Street.
Durant,	708 feet from Vernon Street.
Fenwick,	140 feet from Suffolk Street.
Fenwick,	376 feet from angle in street.
Gates,	419 feet from Westford Street,
George,	197.3 feet from Church Street.
Grand,	370 feet from Hale Street.
Gorham,	Opposite Winter Street.
Grove,	Corner Loring Street.
Grove,	Corner School Street.
Hale,	Opposite Grand Street.
Hale,	In Lincoln Square.
Hale,	Corner Cambridge Street.
Howe,	150 feet from Davidson Street.
Hurd,	123.5 feet from Central Street.

SCHEDULE No. 2—*Continued.*

STREET.	LOCATION.
Hurd,	394.1 feet from Central Street.
Lewis,	Corner of Jefferson Street.
Liberty,	Corner of Lane Street.
Liberty,	29 feet west from School Street.
Liberty,	Corner Hastings Street.
Lincoln,	525 feet from Gorham Street.
Lincoln,	933 feet from Gorham Street.
Lincoln,	Corner of street near F. & L. R. R.
Lincoln,	Corner of Main Street.
Lincoln,	Corner of Tanner Street.
Lincoln,	340 feet from Hale Street.
Lincoln	742.5 feet from Hale Street.
Linden,	Corner of Auburn Street.
Merrimack,	10 feet west of Bridge Street.
Mt. Washington,	330 feet from Varney Street.
Mt. Washington,	Corner of Bowers Street.
Prospect,	270 feet from Kidder Street.
School,	Corner of Westford Street.
School,	405.5 feet south of Westford Street.
School,	Corner of Perrin Street.
Vernon,	Corner of Bennett Street.
Vernon,	Corner of Richardson Street.
Walker,	Corner of Broadway.
Walker,	369 feet from Broadway.
Walker,	756 feet from Broadway.
Walker,	1062 feet from Broadway.
Walker,	767.5 feet from Westford Street.
Walker,	377.5 feet from Westford Street.
Walker	Corner of Kemp Street.

SCHEDULE NO. 2—*Continued.*

STREET.	LOCATION.
Walker,	320.3 feet from Kemp Street.
Walker,	698.8 feet from Kemp Street.
Watson,	Corner of Whipple Street.
West Fourth,	Corner West Street.
West Fourth,	337.5 feet from West Street.
West Fifth,	Corner of West Street.
West Sixth,	Corner of Coburn Street.
Wilder,	Opposite Proud Street.
*Willie,	20 feet from Franklin Street.
Winter,	329 feet from Gorham Street.

Total, 64.

Four hydrants have been discontinued, and two post hydrants have been supplied with city water, making the whole number now in use 460.

*Omitted in last report.

SCHEDULE No. 3.

LIST OF STOP GATES SET FOR THE YEAR ENDING
DECEMBER 31, 1873.

STREET.	LOCATION.	4 in.	6 in.	8 in.	12 in.	16 in.
Bennett,	19.5 ft. from east line of Vernon Street, 13.4 ft. from north line of Bennett Street,		1			
Bleachery Co.,	. . . . .		6	1		
Broadway,	2 ft. west of east line of Wilder Street, 15.5 feet from north side of Broadway,			1		
Broadway,	16 ft. from east line of Broadway, 42 ft. west of bridge at Pawtucket Canal,			1		
Cambridge,	10.3 ft. from south line of Hale Street, 14 ft. from west line of Cambridge Street,	1				
Central,	99 ft. north of north line of Warren Street. 23.5 ft. from west line of Central Street.				1	
Central,	43 ft. south of south line of Market Street, 23.5 ft. from west line of Central Street,				1	
Cushing,	In Liberty Sq., 20.5 ft. from n. line of Fletcher St., 46 ft. from south-west cor. of Richardson's store,			1		
Davidson,	12.5 ft. from east line of Davidson Street, 1.5 ft. from south line of East Merrimack Street,		1			
Dover,	10.7 ft. from east line of Dover Street, 2 ft. north of north line of Westford Street,		1			
Fulton,	2 ft. from west line of Mt. Vernon Street, 8 ft. from north line of Fulton Street,		1			
Gates,	13.5 ft. from east line of Gates Street, On south line of Westford Street,		1			
Grand,	24 ft. from east line of Grand Street, 1 ft. from north line of Hale Street,		1			
Hale,	13 ft. from north line of Hale Street, 4 ft. east of west line of Howard Street,		1			
Hurd,	19 ft. from north line of Hurd Street, On east line of Central Street,		1			
Lawrence,	1.6 ft. east from west line of Lawrence Street, 2 ft. north of n. post of Gate to W.W.P. Co.'s yard,			1		
Lewis,	16.5 ft. from east line of Lewis Street, 2.5 ft. north of north line of Little Street,		1			
Lincoln,	1.6 ft. from north line of Lincoln Street, 5.5 ft. from west line of Gorham Street,		1			

SCHEDULE No. 3—Continued.

STREET.	LOCATION.	4 in.	6 in.	8 in.	12 in.	16 in.
Lincoln,	16.3 ft. from south line of Lincoln Street, Near F. & L. R. R.,		1			
Lincoln,	13.7 ft. from south line of Hale Street, 16 ft. from east line of Lincoln Street,		1			
Little,	21 ft. west from east line of Lewis Street, 11.7 ft. from south line of Little Street,					1
Market,	42 ft. from west line of Dutton Street, 20.5 ft. from north line of Market Street,					1
Merrimack,	25 ft. from north line of Merrimack Street, 9 ft. east from west line of Anne Street,				1	
Mt. Washington,	14 ft. from west line of Mt. Washington Street, 1 ft. from north line of Varney Street,		1			
School,	16 ft. from east line of School Street, 2 ft. south of north line of Broadway,		1			
Walker,	17 ft. from west line of Walker Street, On north line of Broadway,		1			
Walker,	10 ft. from east line of Walker Street, On north line of Westford Street,		1			
Watson,	2.3 ft from west line of Lawrence Street, 19.3 ft from north line of Watson Street,		1			
Wamesit P. Co.	. . . . .		1			
West Fifth,	13 ft. from south line of West Fifth Street, 12 ft. west of west line of Bridge Street,		1			
West Sixth,	6.2 ft. from west line of Pearl Street, 12.3 ft. from south line of West Sixth Street,		1			
Westford,	23 ft. from south line of Westford Street, 3.8 ft. west of west line of Howard Street,			1		
Totals,		3	24	6	3	2

Before closing this report I desire to express my thanks to the present Water Board, also to the former Committees with whom I have been associated, for the generous support they have at all times extended to me in the discharge of my duties. To Mr. Evans, Engineer of this Department, I am also under obligations for assistance rendered.

I bear testimony to the faithfulness of Mr. Spalding (clerk), Messrs. Kelley, Cole and Fraser, in the discharge of duties committed to them; and to their coöperation with me, is the City indebted for the amount of work done the past year.

Respectfully submitted.

S. P. GRIFFIN,

Superintendent.

SCHEDULE

OF PIPES, &c., AT THE PIPE YARD JAN. 1st, 1874.

4 inch.	No. pieces,	. . .	27	4 inch $\frac{1}{8}$ curves,	. . . . .	1
6 "	"	. . .	1189	6 " $\frac{1}{8}$ "	. . . . .	8
8 "	"	. . .	610	8 " $\frac{1}{8}$ "	. . . . .	7
12 "	"	. . .	58	8 " $\frac{1}{4}$ "	. . . . .	1
16 "	"	. . .	33	12 " $\frac{1}{8}$ "	. . . . .	2
24 "	"	. . .	6	12 " $\frac{1}{4}$ "	. . . . .	1
30 "	"	. . .	6	16 "	"	5
4 "	Feet short pieces,	. .	47	24 "	"	7
6 "	" " "	. .	505	30 "	"	5
8 "	" " "	. .	90	6 to 4 inch reducers,	. . . . .	12
12 "	" " "	. .	60	8 " 6 " "	. . . . .	2
16 "	" " "	. .	13	10 " 8 " "	. . . . .	1
24 "	" " "	. .	9	12 " 6 " "	. . . . .	10
30 "	" " "	. .	23	12 " 10 " "	. . . . .	3
Old pipe, feet,	. . . . .		250	16 " 8 " "	. . . . .	1
4 x 4 inches 3 way branches,	. .		7	16 " 10 " "	. . . . .	1
6 x 6 " " "	. .		59	16 " 12 " "	. . . . .	1
8 x 6 " " "	. .		36	4 inch caps,	. . . . .	8
8 x 8 " " "	. .		3	6 " " "	. . . . .	28
12 x 8 " " "	. .		4	8 " " "	. . . . .	21
12 x 6 " " "	. .		10	12 " " "	. . . . .	7
16 x 6 " " "	. .		4	16 " " "	. . . . .	8
16 x 8 " " "	. .		1	4 inch sleeves,	. . . . .	16
4 x 4 inches 4 way branches,	. .		4	6 " " "	. . . . .	20
6 x 6 " " "	. .		26	8 " " "	. . . . .	12
8 x 6 " " "	. .		15	10 " " "	. . . . .	6
8 x 8 " " "	. .		16	12 " " "	. . . . .	8
10 x 8 " " "	. .		1	16 " " "	. . . . .	6
12 x 6 " " "	. .		17	24 " " "	. . . . .	6
12 x 8 " " "	. .		3	30 " " "	. . . . .	5
12 x 12 " " "	. .		6	12 inch half sleeves,	. . . . .	17
16 x 6 " " "	. .		1	16 " " " "	. . . . .	4
16 x 12 " " "	. .		1	24 " " " "	. . . . .	10
30 x 6 " " "	. .		1	30 " " " "	. . . . .	6

SCHEDULE OF PIPES, &c.—*Continued.*

4 inch gates,	2	Hydrant covers,	17
6 “ “	31	Gate frames,	13
8 “ “	7	“ covers,	25
12 “ “	5	Hydrant boxes,	22
Hydrants,	27	Gate boxes,	29
Hydrant frames,	14		

STOCK AND TOOLS IN YARD AND SHOP JAN. 1, 1874.

1480 ft. 1 inch R. C. service pipe,	40 $\frac{3}{4}$ inch cement pipe corp. cocks,
1250 ft. $\frac{3}{4}$ “ R. C. “ “	6 1 inch “ “ “ “
1413 ft. $\frac{3}{4}$ “ “ “	251 $\frac{3}{4}$ inch sockets,
7 ft. 2 inch wrought iron pipe,	407 1 inch “
9 ft. 3 inch “ “ “	21 $1\frac{1}{4}$ inch “
200 $\frac{3}{4}$ inch lead connections,	233 $\frac{3}{4}$ inch stop and waste cocks,
24 $1\frac{1}{4}$ inch “ “	88 1 inch “ “ “ “
2725 lbs. lead pipe,	3 $1\frac{1}{2}$ inch reducers,
930 $\frac{3}{4}$ inch lead couplings,	1 1 inch tap,
35 $1\frac{1}{4}$ inch couplings,	2 tapping machines,
610 1 inch “	1 dry tapping machine,
9 lead connections,	1 tapping machine for cement pipe,
1 $\frac{1}{2}$ inch elbow,	1 cement lining machine,
61 $\frac{3}{4}$ inch “	1 testing machine.
76 $\frac{3}{4}$ inch 4 way,	1 1 inch meter,
28 1 inch 4 way,	3 $\frac{3}{4}$ inch “
4 $\frac{3}{4}$ inch T's,	1 fountain and fixtures,
162 $1\frac{1}{2}$ inch T's,	11 gate screws,
590 $\frac{3}{4}$ inch unions,	10 cutters,
95 1 inch “	6 chisels,
70 1 inch elbows,	11 gasket irons,
2 1x3 inch 4 way,	14 steel wedges,
2 $\frac{3}{4}$ inch caps,	10 caulking hammers,
1 1 inch cap,	24 sets caulking tools,
107 $\frac{3}{4}$ inch plugs,	5 lead pots,
117 1 inch “	6 ladles,
357 $\frac{3}{4}$ inch corp. cocks,	2 furnaces,

SCHEDULE OF STOCK AND TOOLS—*Continued.*

6194 lbs. lead,	4 stop and waste cock wrenches,
10 iron spoons,	2 hydrant wrenches,
$\frac{1}{2}$ box dualin,	1 brass hydrant reducer,
8 coils fuse,	1 copper goose neck,
2 kegs powder,	3 axes,
1 powder can,	4 monkey wrenches,
10 pair piping tongs,	6 files,
4 pipe cutters,	2 saws,
3 1 inch bushing,	2 saw-horses,
6 $\frac{3}{4}$ inch “	3 iron-tooth rakes,
1 set die plates,	3 hand-saws,
2 piping benches,	4 trowels,
1 tool box,	1 chisel,
2 vises,	21 lanterns,
3 soldering furnaces,	2 cans oil,
6 “ irons,	3 oilers,
1 mould,	6 lamp burners,
30 lbs. solder,	88 pick handles,
165 shovels,	28 shovel “
85 picks,	5 hammer handles,
15 bars,	1 work-bench,
23 striking hammers,	11 drain boxes,
5 paving “	2 cement boxes,
1 stone “	30 wooden plugs,
2 nail “	660 ft. 2 inch plank,
3 sledge “	2027 ft. scantling,
12 rammers,	18 cords pine wood,
4 paving mauls,	5 cords logs,
6 tool boxes,	3 paving plank,
11 tag ropes,	382 service boxes,
12 buckets,	513 service box covers,
3 wheelbarrows,	760 lbs. steel drills,
2 derricks,	4 chains,
2 sets blocks and falls,	1 bit stock,
3 sling ropes,	1 tin pump,

SCHEDULE OF STOCK AND TOOLS—*Continued.*

1 grindstone,	2 pails,
4 tape lines,	1 sprinkler,
2 measuring lines,	1 lantern,
1 keg nails,	1 shovel,
25 lbs. gasket,	1 broom,
5 barrels cement,	1 wagon jack,
250 ft. rubber hose,	2 hay forks,
500 lbs. old rope,	1 curry-comb—card brush,
10 lbs. rosin,	2 wrenches,
$\frac{1}{2}$ side leather,	1 pung,
1 jug acid,	1 ton hay,
1 washer cutter,	20 bushels oats,
1 closet,	150 lbs. shorts,
1 desk,	200 lbs. meal,
1 chair,	100 lbs. steel,
1 tunnel,	400 lbs. iron,
3 door locks,	500 lbs. horse shoes,
12 iron washers,	55 lbs. horse shoe nails,
2 horses,	75 lbs. steel caulks,
2 wagons,	1 set shoeing tools,
2 harnesses,	1 ton coal,
1 rubber cover,	200 lbs. scrap-iron,
4 blankets,	1 set blacksmith tools,
1 extra collar,	1 workshop,
2 surcingles,	1 barn,
1 halter,	1 blacksmith shop.

FURNITURE IN DRAUGHTING ROOM.

1 writing desk,	Thermometer,
Drawing table with drawers,	2 tumblers,
Case of drawers for plans,	Pair of shears,
3 stools,	Drawing paper, &c.,
1 letter scale,	7 transit rods,
1 Argand burner,	Steel tape,
Spittoon,	18 marking pins,

SCHEDULE OF FURNITURE—*Continued.*

Hammer,
Sounding rod,
1 office table,
1 drawing table,
5 chairs,
2 ink-stands,
1 paper basket,
2 maps of Lowell,
Looking glass,

Pitcher,
Water urn,
25 lead weights,
2 levelling rods,
2 plumbs,
2 cloth tapes (worn),
Hatchet,
12 feet pole.

LIST OF TOOLS AT ENGINE HOUSE.

1 vise and bench,
8 sets of brasses for engine,
2 sets of differential blocks,
1 piece of 6-inch rope,
2 sets of fire irons,
1 brass hydrant,
1 chopping axe,
11 open-ended wrenches,
2 jack screws,
4 hand hammers,
20 cold chisels,
1 ratchet,
1 barometer,
1 water cooler and stand,
1 desk,
2 indicators,
 Small locker for oil cans,
9 copper oil cans,
2 copper dishes for oil cans,
 Scales,
4 crow bars,
64 ft. of $\frac{1}{2}$ -inch chain,
8 eye bolts,
1 coal stove and hod,
 Truck,
1 hogshead,

2 gas lamps,
1 high grade thermometer,
3 spare rubber valves,
4 brass bolts,
5 spare pump valves,
5 sets of spare weights for valves,
100 spare grate bars,
12 cast iron roofing bars for boilers,
11 socket wrenches,
4 gas tongs,
3 sledge hammers,
10 bright wrenches,
6 files,
6 drills,
2 thermometers,
1 black walnut cabinet for tools,
 Lamp,
9 chairs,
2 lengths of fire hose,
6 copper lamps,
2 3-gallon tin oil-cans,
2 shovels,
1 gas meter,
4 brushes,
70 bolts, assorted sizes,
1 heating furnace,

SCHEDULE OF TOOLS, &c.—*Continued.*

1 spare brass wire screen,	2 tin measures,
3 monkey wrenches,	1 two-gallon can and oil,

LIST OF FURNITURE, &c., IN WATER BOARD'S AND SUPERINTENDENT'S ROOMS.

3 writing desks,	1 bar,
3 office tables,	2 carpets,
11 office chairs,	4 mats,
2 common chairs,	2 stoves,
1 stool,	4 spittoons,
1 letter book press,	2 thermometers,
4 ink stands,	1 paper basket,
1 clock,	1 looking glass,
4 lanterns,	1 hat rack,
7 gate wrenches,	1 closet,
1 shovel,	1 Argand burner.

REPORT

OF THE

ENGINEER,

TO THE

COMMITTEE ON SEWERS AND DRAINS,

OF THE

CITY OF LOWELL,

ON A

General System of Sewerage.

1873.



LOWELL:

CITIZEN AND NEWS PRESS,—KNAPP & MOREY, BOOK AND JOB PRINTERS,
44 Central Street.

1874.

REPORT.

ENGINEER'S OFFICE,
Lowell, December 20th, 1873. }

To the Committee on Sewers and Drains of the City of Lowell:

GENTLEMEN : I was employed by your predecessors, in June of last year, to make surveys and plans for a general system of sewerage for the city. The scheme for it being matured in accordance with the instructions given me, I now hand you my report on the same, together with the profiles of all the sewers, and estimates of cost. It will, however, require a short time longer to complete the drawings.

Before submitting it to you for your approval, a few preliminary remarks on the subject generally, will not be out of place.

SYSTEMATIC SEWERAGE.

Great diversity of opinion exists as to what constitutes a good system of sewerage. Authorities on this subject in England and on this continent being of the opinion that no system is good where the sewage matter is not made use of for agricultural purposes, and in England variously estimate its value from two to ten shillings for

each individual per annum, and also show us the foolish waste of throwing all this value away, and the injurious effect caused by its pollution of rivers and harbors.

In our country very few cities had, until recently, any system or method in their drainage, the sewers being built only as required, and draining to the nearest stream, pond or cesspool. The subject is now receiving considerable attention everywhere, and we have the experience of some fifteen or twenty years of the most carefully devised systems of this country as a guide, the best examples being those of Brooklyn and Chicago, both commenced about the year 1856, and both systems planned and executed under the direction of eminent engineers, who gave the subject very thorough study, Mr. Chesborough, being sent to Europe by the city of Chicago, to examine and report on the various systems of the principal cities of Great Britain and Europe; and Mr. Kirkwood obtaining by correspondence with the engineers of the principal European cities, similar valuable information.

The reports published by these gentlemen and by Mr. J. W. Adams of Brooklyn, furnish very valuable information on the subject; but London has always been the great field for study into this question, and the voluminous reports of the Metropolitan Sewer Commission, and the Metropolitan Board of Works, containing, as they do, the results of the elaborate investigations of Mr. Bazalgette, engineer of the Metropolitan Commission, Mr. Haywood, engineer of the city of London, Mr. Rawlinson of London, Messrs. Roe, Wicksteed, Hawksley, and others, must continue, as heretofore, to be the standard books of reference for thorough inquiry into every branch of the subject.

London, according to a recent authority, contains about

1,700 miles of sewers, of every form, variety and size, inclination and perfection of workmanship, and a careful study of their excellencies and defects has furnished the materials from which have been elaborated the different theories that now prevail with regard to the best mode of draining towns and cities.

As an illustration of the very recent date of systematic sewerage even among the best regulated cities of this country, it is mentioned by Mr. Chesborough in his report on the subject in 1858, "that Philadelphia has nothing that may be called a system of sewers; and that Baltimore has no public sewers at all, connected with house drainage, and only a very few to relieve particular streets of storm water." By recent letters of enquiry, (in 1872,) I learn that there has been very little improvement in this particular in either of these great cities.

In studying the various plans for improvement of the drainage of English and European cities, wherever the subject is discussed by the best sanitary engineers, there is hardly any but consider it necessary that the sewage of all cities and large towns should be made use of for agricultural purposes, and in fact, one of the great engineering questions of the day is the

UTILIZATION OF SEWAGE.

No city in the United States, (that I am aware of,) except Worcester, has as yet made any attempt at the utilization or purification of sewage; not because they are not aware of the evils produced by the pollution of rivers and harbors, but because the means has not been found by which the value of the manure obtained from it will

pay for the cost of obtaining it, and because the evil effects experienced have not as yet been sufficiently bad to drive them to it from purely sanitary motives; and further, because we are all waiting for the question to be settled in England, how best to accomplish the end. There is every prospect that a satisfactory result will soon be arrived at there, because they are being driven by necessity to solve the question, and when it is, I have no doubt that many of our cities will profit by their experience.

The various schemes adopted in England for the utilization of sewage matter, are known under the following general names ;

1st—MIDDEN PITS, CESSPOOLS, &c.

2d—PAIL SYSTEM.

3d—DRY ASH CLOSETS.

4th—EARTH CLOSETS.

5th—FILTRATION AND IRRIGATION.

6th—PRECIPITATION AND DEODERIZATION PROCESSES, principally by lime, magnesia and iron.

7th—THE A B C PROCESS, OR SILLAR'S PATENT.

For a full description of these various processes, I would refer to Corfield's excellent and very interesting work on the "Utilization of Sewage."

I find by reference to this work, that about twenty cities of England have adopted sewage irrigation of land as a means of utilization, and that a number of cities in Germany have determined to follow the English example. In Milan, the liquid refuse of the city has for many years been used for irrigation, and it is now all collected and used for fertilizing 4,000 acres of land, after which it falls into the river Lambro, about ten miles below the city. It is calculated that to each acre is applied the liquid refuse

of about forty persons, and that abundant crops are produced without any other manure.

Near Edinburgh, sewage irrigation has been going on for the last 200 years. The quantities of sewage supplied to those lands (the Craigentenny meadows) are very enormous; thus, in some parts it is applied at the rate of the refuse of 350 people per acre, the quantity being often as much as ten or fifteen thousand tons per acre during the growing season, besides an indefinite quantity during the winter. The stream flows on in almost undiminished foulness to the meadows lower down.

At Leamington, England, extensive pumping works have just been built to supply a large farm two and a quarter miles off, the sewage of the city being pumped through a cast-iron pipe, raised more than fifty feet in this distance, and distributed to the different points where wanted by means of branch pipes and hydrants. The city receives an annual rental for the sewage of about £1,500 and for this has built and maintains the pumping works at its own expense.

At Croyden, Worthing, Beddington, and other cities, are interesting examples of sewage irrigation, and at London, Hastings, Tottenham and Leicester, of precipitation processes; but as the time has not yet arrived for the utilization of the

SEWERAGE OF LOWELL,

I propose only to explain what I have deemed the best method of conveying all this refuse to the rivers, with explanations of the necessary details, some recommendations for their execution, and such other remarks as seem

to me necessary for the development and perfection of the scheme.

The location of the city on two considerable rivers, with a hilly and undulating surface, would seem to offer great advantages for perfect drainage, but the numerous canals running in various directions, some of which occupy the natural channels of drainage, others crossing the paths by which it would be desirable to carry main sewers, combine to add to the difficulty and expense of the undertaking.

POLLUTION OF THE RIVERS.

There would seem little fear at present of contaminating, to a dangerous extent, the waters of the Merrimack, as its volume and current are so great, and as the recurrence of freshets every spring and fall may be relied upon to sweep away the possible accumulation of the dry season.

The quantity of water which the Locks and Canals Company furnish to the factories through the two main canals, is stated by Mr. Francis to be 3,600 cubic feet per second, and as the whole volume of the water of the Merrimack is made use of by that company during a small portion of the driest seasons, we may consider the above quantity to represent the river volume in its lowest stage.

Supposing the water supply of Lowell to be sixty gallons per head, and the loss by evaporation and otherwise to be equal to the amount of solid matter added from the kitchens, water-closets, &c., (it having been found by experiment that the solid to the liquid portion of sewage

bears generally the proportion of 1 to 96,) and that one-half of the whole amount flows into the sewers in eight hours ; this, for a population of 50,000, would amount to 6.94 cubic feet per second, being a proportion to the river water, in its most unfavorable stage, of 1 to 519, without counting the water of the Concord river, and the dilution of the sewage itself, and this being discharged at about twenty main outfalls, would be so distributed as not likely to cause a perceptible pollution even in the dryest season.

The Concord river is a more sluggish stream, and has several dams which impede the flow and scour of its bed. It is not, therefore, so favorable, in a sanitary point of view, to discharge sewage matter into as the Merrimack, but owing to the very large additional expense of conveying the sewage of Wards No 3 and 4 into the Merrimack, I have not thought it desirable to attempt it, nor do I anticipate that very much nuisance will be noticed until the population of these districts shall have increased greatly beyond their present numbers, and when that time arrives an intercepting sewer may be built to carry it to the larger river, or, perhaps it may be wanted for farm irrigation.

DRAINS AND SEWERS.

The original object of drains, was to relieve the surface of rain water, and for the drying of marshy and otherwise wet localities. All house refuse and excrementitious matter was collected in various kinds of receptacles, and removed by carts or otherwise by some sort of manual labor, but, as practised now, the drainage and sewerage of a city comprehends both the removal of surface rain

water and of all house refuse of animal and vegetable substances, including the contents of water-closets and many other substances which were formerly carted away but are now removed through the agency of water alone. This manner of disposing of sewage is called the

WATER CARRIAGE SYSTEM.

It is, with some exceptions, the general practice in England, and so far as sewerage works have been designed and constructed in the United States, the universal practice. The great improvements which are to be noticed in the sewerage of all enlightened cities, both in this country and Europe, since about the year 1850, are to be attributed, not only to the more abundant supply of water delivered to dwelling houses, admitting of its free use in the luxuries as well as the mere necessities of domestic life, and its consequent cleansing action upon the sewers, but also to a change in the modes of sewerage previously prevalent. This change consisted in the introduction of smaller sewers, the sizes of which were governed solely by the amount of sewage and rain water to be passed through them, in place of the unnecessarily large sewers which served as receptacles for deposits until removed by heavy rain storms or manual labor. The accumulations frequently remained long enough to become putrescent, and by their decomposition became exceedingly offensive, and produced sickness. The change from large to small sewers was the subject of earnest discussion in England for several years, until finally settled by the general adoption of the small sewers, and of pipe sewers within certain limits.

The ruling principle insisted upon and now generally admitted, is, that each day's sewage shall be removed from the city on the day of its production ; that it shall pass off before decomposition begins ; that it shall not be allowed to settle and fester in the sewers, producing those noxious gases which are so prejudicial to health.

Mr. Kirkwood states in his report upon the sewerage of Brooklyn, that

"If the rate of inclination of a sewer is not flatter than *one foot in four hundred and forty*, the experience of Brooklyn and other cities equally well supplied with water, shows that the fluid domestic sewage of any street is competent to carry off daily all the heavier matters of sewage, and to keep the drains free and clean, provided that the form of the sewer is such as to concentrate these sewage waters as much as possible."

"In Chicago, where pipe sewers of 12-inch diameter are used, with an inclination of *one in five hundred*, a tank placed upon wheels has been used wherewith to flush them occasionally. Where, however, the leaders (rain spouts) of the dwelling houses are connected with the house drain, this precaution has not been found necessary."

SIZE OF SEWERS.

The smaller the sewer can be built and yet have sufficient capacity to perform the duties required of it in a satisfactory manner, will readily be conceded as the end to be desired from motives of economy, and as the ordinary duty of a sewer is to carry only the sewage proper, which being very small in amount, requires to be concentrated into the least possible area, so that it may properly flow off without the aid of rain-water, it may also be seen that its efficiency is improved by the same means. The question then remaining to be settled, is, What is the minimum size practicable?

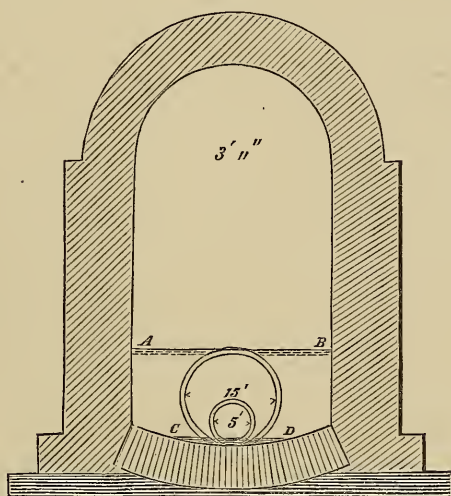
There are three conditions governing the size of a sewer

at any point. These are, first, the amount of sewage proper, to be conveyed away; second, the amount of rainfall to be provided for; third, the inclination of the sewer. The extremes of rainfall mainly determine the size of sewers. The household sewage becomes a very small item in comparison, as will be seen by the following calculation:

Allowing for a rainfall of one inch per hour, and as before shown, sixty gallons, or about eight cubic feet per head of population for sewage; and estimating as the largest probable population that may ever be expected to live upon any one square mile of ground in Lowell as 50,000, and that half of the sewage proper furnished by this population be discharged into the sewer in eight hours, we have from sewage proper, 0.0069 cubic feet per second; from one inch of rainfall per hour, 1.009 cubic feet per second, the sewage proper being to the rain-water as one to one hundred and forty-six in volume. In other words, the sewage is equivalent (even in this excessive estimate of population) only to 0.0068 parts of an inch in an hour, or less than $\frac{1}{100}$. It will thus be seen that if the capacity of our sewers is sufficient for carrying off a rain-storm of one inch per hour, no further allowance need be made for sewage, as it is insignificant in comparison with the storm discharge.

EXPERIMENT MADE TO DETERMINE THE AMOUNT OF SEWAGE
FROM 1,200 HOUSES.

FIG. 1.



*A B, Flow of storm-water from forty-three acres
of paved and covered surface.*

*C D, Ordinary flow of the sewerage from 1,200
houses.*

“In this sewer, (shown in the accompanying figure 1,) which has a flat segmental bottom three feet wide, a sectional area of 15 feet, and an average fall of one in 118, the deposit from the 1,200 houses readily accumulates at the rate of 6,000 cubic feet per month. But a pipe of 15-inches diameter, placed along the bottom of this sewer, with a somewhat less inclination (one in 155) kept it perfectly clear of deposit. The average flow, without rain-fall, was about fifty-one gallons per hour per diem. The absolute drainage apart from the rain-water from all the 1,200 houses, would have passed through a 5-inch tube, (of the relative size of the smaller one shown within the 15-inch tubular pipe placed along the bottom of the brick sewer,) or not one-third the area of the minimum sized drain which had, up to the time of the investigation, been declared and enacted in the Metropolitan building act, to be necessary for a single house, namely, one of not less than nine inches in diameter.”—*Mr. Adams's extract from a Parliamentary report.*

RAINFALL IN LOWELL.

I have assumed in the calculations for the sizes of sewers in Lowell, that a rain-storm of one inch rainfall in one hour is to be provided for. This occurs very rarely in our vicinity, and is a very heavy storm. Instances have occurred of much heavier storms, even as much as two inches having fallen in Boston, and one and a-half inches in Lowell in one hour, on the 29th of August, 1872, but this was very unusual, and even if the sewers were built large enough to carry such an amount of water in that short time, there never would be enough street entrances to take it in; the surplus will run in the gutters.

I quote from Mr. J. W. Adams, of Brooklyn :

“No system yet proposed in any city, contemplates the removal of *excessive* storm-waters by means of the sewers alone; such storms for instance as discharge for short intervals, two or three inches of rain in the hour. They occur but seldom, and are of short duration, and the damage is usually confined to limited areas, whilst the construction of sewers to meet the contingency, would be attended with an enormous expense over the whole city, both in construction and repairs, and of doubtful efficiency when suddenly called upon, and extremely objectionable as conduits for the ordinary flow of sewage.”

TABLE, SHOWING MONTHLY RAINFALL FOR FIFTEEN YEARS IN LOWELL.

	1858	1859	1860	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872
JANUARY,.....	2.578	4.993	0.799	5.153	6.107	4.031	2.642	3.992	1.922	4.665	3.512	3.229	7.093	1.922	2.093
FEBRUARY,.....	1.776	3.803	2.439	2.531	2.684	3.201	0.985	3.729	4.695	3.847	1.205	6.023	4.855	2.715	2.411
MARCH,.....	1.522	6.662	2.136	4.569	5.202	4.957	8.415	4.289	3.605	5.092	3.353	5.640	5.789	3.776	3.772
APRIL,.....	4.206	2.904	1.094	4.388	2.224	6.751	3.593	2.242	2.853	2.650	5.570	1.484	6.484	3.351	1.754
MAY,.....	3.533	3.430	1.850	4.063	1.900	1.964	2.811	6.324	4.475	3.739	9.034	5.422	2.047	3.944	3.374
JUNE,.....	5.403	6.185	4.837	1.943	5.773	1.606	1.071	1.855	2.661	3.256	4.454	4.439	4.438	4.671	5.717
JULY,.....	3.238	1.197	6.549	3.087	5.200	10.229	1.817	1.868	5.562	4.625	0.865	1.289	1.984	3.385	3.507
AUGUST,.....	3.424	3.428	4.299	4.768	2.551	6.661	3.540	2.790	3.684	9.658	2.842	1.584	3.401	5.454	9.462
SEPTEMBER,.....	3.583	3.941	9.963	2.039	2.177	2.903	2.895	0.556	3.812	0.493	11.633	4.828	1.516	1.134	4.307
OCTOBER,.....	3.099	2.177	2.503	3.791	3.515	3.982	3.845	5.156	1.644	3.374	0.969	6.884	5.081	4.363	3.293
NOVEMBER,.....	1.259	3.082	3.713	3.620	5.082	6.312	4.095	3.049	2.710	2.717	4.696	2.682	2.894	6.910	4.735
DECEMBER,.....	4.114	6.610	6.491	3.002	2.287	5.216	4.940	2.974	3.741	1.751	1.453	5.467	3.126	2.547	4.240
Total,.....	37.735	48.412	46.673	42.954	44.702	57.813	40.649	38.824	41.363	45.867	49.586	48.971	48.708	42.172	46.665

MEAN ANNUAL RAINFALL FOR FIFTEEN YEARS, 45.778 INCHES.

TABLE, SHOWING THE NUMBER OF RAIN-STORMS IN EACH YEAR, AND THE
AMOUNT IN INCHES OR FRACTIONS, THAT FELL ON A GIVEN NUMBER OF DAYS EACH YEAR.

Y E A R .	1-10	2-10	3-10	4-10	5-10	6-10	7-10	8-10	9-10	1 in.	1 1-10	1 2-10	1 3-10	1 4-10	1 5-10	1 6-10	1 7-10	1 8-10	1 9-10	2 in.	2 1-10	2 2-10	2 3-10	2 4-10	2 5-10
.....1861.....	11	12	9	2	7	5	4	3	5	2	1	2	1	1	0	2	1	1	0	1	0	0	0	0	0
.....1862.....	25	7	7	7	9	1	4	4	0	4	2	1	2	1	1	1	0	0	2	0	1	0	1	0	1
.....1863.....	20	5	10	2	2	7	2	6	5	1	3	4	1	1	1	1	1	0	1	0	0	0	0	0	0
.....1864.....	25	9	11	3	3	6	3	5	1	1	1	1	2	0	2	0	0	1	1	0	0	0	0	0	0
.....1865.....	26	12	8	5	5	3	3	2	2	4	1	2	1	2	1	1	0	0	0	1	0	0	0	0	0
.....1866.....	14	7	5	4	4	4	3	2	7	5	1	2	0	1	0	1	0	0	0	2	0	0	0	0	0
.....1867.....	10	13	11	6	6	2	4	2	2	2	2	0	1	1	1	0	1	1	1	1	0	0	0	0	0
.....1868.....	13	12	11	9	4	0	2	5	3	2	1	1	0	2	2	2	0	1	1	1	0	0	0	0	0
.....1869.....	12	6	3	9	6	4	3	3	2	6	0	0	2	0	3	0	0	0	1	2	0	1	0	1	0
.....1870.....	16	8	11	7	4	4	3	2	2	4	3	2	1	1	1	0	0	2	1	1	0	0	0	0	0
.....1871.....	20	12	14	4	5	10	2	1	4	2	1	1	0	0	0	0	0	0	2	0	1	0	1	0	1
.....1872.....	20	15	9	8	11	7	4	3	5	1	1	4	0	1	0	0	1	1	0	0	1	1	1	1	0

NOTE. The above was made up from the record kept by Mr. J. B. Francis, at Pawtucket Falls, and which he kindly allowed me to copy; but I could find no record that would enable me to determine the extreme amount falling in short periods of time. This table, while it approximates nearly to the amount of rain-fall in twenty-four hours, probably shows more days in each column than should be shown, as there was no record of the length of the storms.

In the extensive sewerage works of Brooklyn, N. Y., projected in 1857 by Mr. J. W. Adams, after a thorough investigation of the subject, he adopted one inch of rain-fall per hour as the basis upon which to calculate the sizes of the sewers. This was over fifteen years ago, and I have recently learned from him (and he has ever since been in charge of the works) that he considers the sewers large enough. He tells me in a letter of August 15, '72:

“We have over two hundred miles of sewers in this city, and we find no complaint of their inefficiency, and as before remarked, they were designed but for one inch in the hour of rain.”

He further adds :

“I have found, however, that a greater allowance must be made in the dimensions of sewers from the effect of *curves*, and if we could but *straighten* our lines of drainage, or even make the curves flatter, (larger radius,) we should have no difficulty, only it should be borne in mind that we do not undertake to carry off *water-spouts*.”

Mr. W. H. Bradley, the able superintendent of sewers in Boston, adopts the same basis of an inch rain-fall per hour for calculation of sizes, and in his last report of January, 1873, he states that there are now about one hundred and twenty-three miles of sewers built, and these are generally considered large enough.

It is assumed in the calculations, and proved by data obtained from recorded observations, that where one inch of rain falls in an hour, on large areas, not more than one-half of the resulting quantity of water reaches the sewer within the same hour; one-half of an inch therefore becomes the maximum of rain-fall as regards sewer dimensions. One inch of rain, Mr. Adams says, cannot enter the sewer in an hour, through the catch-basins, unless located at shorter intervals than is customary.

There is, of course, a larger difference in the yield of rain from covered areas, or such as are built upon, and the streets paved, from those which are partly agricultural and suburban, but even in the former its progress from the roofs of the houses to the spouts and drains, and from the surface of the streets to the gutters and catch-basins, consumes, necessarily, a certain amount of time, so that the water will always be found flowing in the streets for a while after the rain has ceased to fall. A considerable portion of the water passes the gully openings and flows on in the gutters to the lower parts of the city, some of it finding its way into the rivers and canals, independent of the sewers, and all of it consuming time in the gutter channels. Again, the heaviest rains occur usually in the summer time (thunder showers) when the ground is dry and porous, and the roofs and buildings are thoroughly heated, so that a large amount is evaporated as well as absorbed. In the case of partly agricultural and suburban districts, the absorption and evaporation is still greater.

From recorded London observations it appears that in a particular district a rain-fall of 1-2 inch in three hours, took twelve hours before the flow in the sewer resumed its ordinary level, on a covered area; and a rain-fall of 1 1-16 inch in an hour, and 3-16 in the next two hours, occupied in discharging, fifteen and three-fourth hours; those points nearest the outfall draining off first, the more remote next, and some portions would be entirely clear before the water from the most remote points would reach the outfall.

With regard to the amount of rain reaching the sewer:

“In the Surrey street sewer in London, draining one hundred and sixteen acres, a rain-fall of 2.9 inches in thirty-six hours, (October 1857,) gauged at the

outlet, gave as the discharge, but sixty-four and a-half per cent. of the rain-fall. The Ratcliff sewer, draining three hundred and thirty-two acres, gave from the same rain-fall, in twenty-five hours, only fifty-two per cent.

The first mentioned sewer was on a steep inclination, and an exclusively urban district. The second was only moderately inclined, but equally compactly built."—*Mr. Adams' Report of March 19, 1857, p. 16-17.*

The deduction drawn from these observations is, that the immediate contribution to the sewers of sudden and heavy rains, does not exceed one-half of the quantity which falls, and much less in flat, suburban districts.

METHOD OF CALCULATING SIZES OF SEWERS.

Having assumed the rain-fall to be provided for to be one inch in an hour, I propose to explain the method used to determine the dimensions of a sewer to accommodate it, the elements in the calculation being the drainage area and the inclination of the sewer.

In determining the diameter of conduit pipes for the supply of water to a city, the standard formulæ used, which have been determined from experiments, suppose the motion of the water to be uniform, or that the retarding force of friction equals the accelerating force of gravity, the length of the pipe being an element of retardation and the velocity which the water takes in a given sized pipe to be the same to the end of it. But, in a system of pipes and sewers for drainage, it is clear that the constant addition of streams with greater velocity than the main stream itself, will have a tendency to *increase* its velocity to the point of discharge.

In view of this theory, experiments were made by which it appeared that by the standard formulæ for water-

supply, the drainage of twenty acres would require a pipe of twenty-three inches in diameter, whereas in reality a little less than a nineteen inch pipe was found to be sufficient, or a capacity a very little more than one-half the calculated area, or as 283 to 415.

Mr. J. W. Bazalgette, engineer of the London Drainage Works, in his evidence given before the Parliamentary Commission in January, 1857, gives the following as the formula employed by him in determining the size of main

outfall sewers : $\frac{3 \log. A + \log. N + 6.8}{10} = \log. \text{ of diameter}$
of sewer in inches required to carry off one inch of rainfall per hour.

A being the number of acres to be drained.

N length in feet in which the sewer falls one foot.

This formula was made from the experience gained by a continued series of experiments in the different London drainage districts and by his own practical and scientific observation.

The same formula was adopted by Mr. Adams of Brooklyn, and by it the sizes of more than two hundred miles of sewers have been determined in that city, and he writes me that there are no complaints of their insufficient size.

I have, therefore, felt justified in adopting this standard formula for my guide in determining the sizes of the large main sewers of Lowell; but, as there are local peculiarities affecting the yield of rain from different localities, these have always been considered; for example, steep districts, discharging their waters quickly, require larger sewers, than flat or slow yielding districts.

In determining the diameters of small sewers draining less than five acres, I make use of standard formula

for the discharge of water through a conduit pipe from a still reservoir of

D'Abuissou's

$$Q=94.738 S \sqrt{\frac{PS}{C}}$$

in which S=area of section,

P=slope, or length divided by fall,

C=wetted perimeter,

Q=cubic feet per second,

or D'Abuissou's direct for diameter

$$D=.2349 \sqrt[5]{\frac{LQ^2}{H}}$$

in which L=length in feet,

H=height or fall in feet,

Q=cubic feet per second,

D=diameter of circular sewer in feet,

or Prony's

$$V=48.5 \sqrt{DS}$$

in which V=velocity in feet per second,

D=diameter of sewer in feet,

S=sine of inclination,

which give sewer capacity for the full inch of rain, without deduction, while Bazalgette's formula above used for *large areas*, as before stated, only allows *sewer capacity* for less than one-half of the inch of rain-fall.

Mr. John Roe, chief surveyor of the Metropolitan Commission of Sewers, London, conducted a series of gaugings and observations of the sewers in the Holburn and Finsburg divisions, extending over a period of twenty years, from which he formed a table showing the number of acres of covered surface (as in cities) from which circular sewers, with junctions properly connected, will convey away the water-fall of a rain of one inch per hour, with house drainage besides.

This table is approved by the celebrated hydraulic engineer, Mr. Hawksley, by Mr. Bidder, and other practical engineers in England, and has also been adopted in the United States by Messrs. Kirkwood and Adams, and many other hydraulicians, as a guide and basis for calculations of sizes of main outfall sewers.

Mr. Roe, in his account of the formation of this table, says :

“ In some instances the observations were carried on during the whole period of heavy rains, being commenced as each storm began and continued until the effect had ceased in the sewers, the depth of water being taken every five minutes, and the velocity of the current repeatedly noted at every depth.

“ In some instances the observations were continued day and night for several months in different years, and in others they were conducted day and night for two years ; rain-gauges being kept to ascertain the depth of rain that fell.

“ Every junction, whether of sewer or drain, should enter by a curve of sufficient radius.

“ All turns in the sewer should form true curves, as even in these there will be more friction than in the straight line.

“ A small addition should at curved points be made to the inclination of the sewer.”

MR. ROE'S TABLE.

INCLINATION, FALL OR SLOPE OF SEWER.	INNER DIAMETER, OR BORE OF SEWER IN FEET.									
	2	2½	3	4	5	6	7	8	9	10
LEVEL.	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres
	39	67	120	277	570	1020	1725	2850	4125	5285
¼ inch in 10 feet or 1 in 480...	43	75	135	308	630	1117	1925	3025	4425	6250
½ inch in 10 feet or 1 in 240...	50	87	155	355	735	1318	2225	3500	5100	7175
¾ inch in 10 feet or 1 in 160...	63	113	203	460	950	1692	2875	4500	6575	9250
1 inch in 10 feet or 1 in 120...	78	143	257	590	1200	2180	3700	5825	7850	11050
1½ inch in 10 feet or 1 in 80...	90	165	295	670	1385	2486	4225	6625		
2 inch in 10 feet or 1 in 60....	115	182	318	730	1500	2675	4550	7125		

The following table (taken from Mr. Kirkwood's account of Brooklyn Water Works) gives the sizes as calculated by Mr. Bazalgette's formula for various areas, compared with those given in Mr. Roe's table for the same area, and it will be noticed that the formula shows results always in excess of this table, the excess being greater in the larger areas than in the smaller ones, which is, as he remarks, a difference on the safe side:

SIZES GIVEN BY ROE.	INNER DIAMETER OR BORE OF SEWER IN INCHES.									
	Inclination.	24	30	36	48	60	72	84	96	
Acres drained,.....	1 in 480	43	75	135	308	630	1117	1925	3025	Acres
<i>Size by formula,.....</i>		27.4	32.4	38.6	49.5	61.4	72.9	85.8	98.2	<i>Inches</i>
Acres drained,.....	1 in 240	50	87	155	355	735	1318	2225	3500	Acres
<i>Size by formula,.....</i>		26.8	31.6	37.6	48.2	60.	71.4	83.6	95.8	<i>Inches</i>
Acres drained,.....	1 in 160	63	113	203	460	950	1692	2875	4500	Acres
<i>Size by formula,.....</i>		27.5	32.8	39.1	50	62.2	73.9	86.7	99.2	<i>Inches</i>
Acres drained,.....	1 in 120	78	143	257	590	1200	2180	3700	5825	Acres
<i>Size by formula,.....</i>		28.5	34.2	40.8	52.4	64.8	77.5	90.9	104.1	<i>Inches</i>
Acres drained,.....	1 in 80	90	165	295	670	1385	2486	4225	6625	Acres
<i>Size by formula,.....</i>		28.6	34.3	40.8	52.2	65.	77.4	90.8	103.9	<i>Inches</i>
Acres drained,.....	1 in 60	115	182	318	730	1500	2675	4550	7125	Acres
<i>Size by formula,.....</i>		29.9	34.3	40.6	52.1	64.7	76.9	90.2	103.2	<i>Inches</i>

The sizes required for main outfall sewers may be obtained in any place, as has been done by Mr. Roe and some others in London, by simultaneous and long continued observations of the actual flow in the sewers by gauging the rainfall of each shower, and by comparing these results with the number of acres of water shed, accurate information applicable to the particular circumstances of the locality may be arrived at and tables made; but the

great time and expense attending it has prevented any extensive observations from being made in the United States up to the present time. Colonel A. W. Gilbert, engineer of the sewer department of Cincinnati, however, tells me that he has caused hooks to be inserted in the joints of the large main sewers, at intervals of about six inches in height, on which he places short pieces of light wood, so that the water as it rises in the sewer detaches the float, and on inspection immediately after a rain, shows to what height the water flowed in the sewer. He expects in time to obtain valuable information in this manner as to the capacity of sewers for discharging storm waters.

INCLINATION OR GRADE OF SEWER.

The condition of sewers under ordinary circumstances is, that a very small stream of house sewage only covers a few inches of the bottom, and occupies only a fractional part of its sectional area. The velocity of flow for the same sized sewer being proportional to its depth, and the depth never being the same, renders it impracticable to calculate a suitable inclination for each sized pipe. If we assume, however, that the pipes run *half full*, the following inclinations according to Mr. Adams, will sweep away any substance which should be found in the sewers, and many which should not. This quantity of water can be introduced at any time by the process of temporary dams or gates at the manholes, producing a sudden flush or scour of the sewers, by water from the hydrants.

For a 6 inch pipe a grade of 1 in 60.

"	9	"	"	"	1	"	90.
"	12	"	"	"	1	"	200.
"	15	"	"	"	1	"	250.
"	18	"	"	"	1	"	300.
"	24	"	"	"	1	"	400.
"	30	"	"	"	1	"	500.
"	36	"	"	"	1	"	600.
"	42	"	"	"	1	"	700.
"	48	"	"	"	1	"	800.

Mr. Wicksteed, an experienced English hydraulic engineer, gives the following table of the least velocities and grade or falls, to be given to drain-pipes and sewers in cities, in order that they may under ordinary circumstances keep themselves clean, or free from deposit :

DIAMETER IN INCHES.	VELOCITY IN FEET PER MINUTE.	GRADE ONE IN	GRADE IN FEET PER MILE.
6	220	65	81.2
8	220	87	60.7
10	210	119	44.4
12	190	175	30.2
15	180	244	21.6
18	180	294	18.0
24	180	392	13.5
30	180	490	10.8
36	180	588	9.0
42	180	686	7.7
48	180	784	6.8
60	180	980	5.4

TOO LARGE SEWERS.

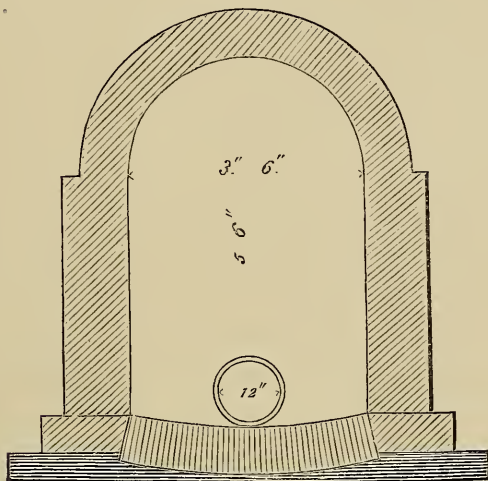
Great misapprehension exists in the public mind with regard to the proper sizes to be given to sewers, the popular belief being that if they are made large, there can be no possible danger (beyond that of cost) of making them too large, yet experience proves that if a sewer is too large for the work it has to do, it is more liable to accumulations of deposit and consequent stoppage, than if it were too small, and the expense and difficulty of removing the obstructions are increased with the size; the larger it is the more water it requires from the hydrant to flush it, and the greater the amount of deposit to be removed, but the principal point is, that the greater depth of water always maintained in the smaller sewer prevents the deposit from forming. As the true purpose of the sewer is the instant removal, from the vicinity of dwellings, of all refuse liable to decomposition, which is capable of being removed by water, by making it larger than necessary, this object is frustrated, and it is thereby converted from a sewer into a cesspool. The large sewer gives scarcely an appreciative depth of water when carrying only ordinary sewage and invites a deposit, while the smaller the sewer the greater the depth of water and consequent scouring effect. Advice is frequently given to those building sewers to be sure to make them large enough; it should be supplemented by a few words more and read large enough *not* to keep themselves clean.

EXAMPLES IN ILLUSTRATION OF THE ABOVE THEORY.

Experiments were made by William Hull, under the direction of the Metropolitan Commission of Sewers in

London, in the main line of sewer in upper George street, shown in Fig. 2, which illustrates the ideas expressed above: "This is a large sewer, five-and-a-half feet high by three-and-a-half feet wide, draining forty-four acres;

FIG. 2.



Area drained, forty-four acres.

a 12-inch pipe sewer was laid through the inside along the bottom of the large one and a dam built so as to oblige the sewage of the whole area to pass through the smaller pipe. Observations were continually made and the results were found to be as follows:

"The velocity of the stream in the pipe was observed to be four and a half times greater than the velocity of the same amount of water on the bed of the old sewer. As the force of a stream is proportionate to the square of its velocity, the draining power of the concentrated stream in the pipe, would be above twenty times as great as that in the wide sewer; consequently, stones, &c., which might rest in the latter, would be swept away by the more rapid flow. The pipe was not found to contain any deposit; but, during the heavy rains, stones were heard distinctly rattling through it. When the pipe is nearly filled, the velocity and concentration of the water are sufficient to clear away any mat-

ter which may have been drained into the pipe from the large sewer, and much of which matter it may be presumed, would never enter a well regulated system of pipe sewers, also the force of the water issuing from the end of the pipe is sufficiently great to keep the bottom of the old sewer perfectly clean for twelve feet in length; beyond this distance a few bricks and stones are deposited, which increase in quantity as the distance from the pipe increases. Beyond a certain distance, mud, sand, and other deposits occur, to the depth of several inches, so that the stream there is wide and comparatively sluggish, and being dammed back by the deposits, exerts an unfavorable influence on the flow of the water through the pipe. On the invert of the original sewer, which now forms the bed of the pipe, deposit was constantly accumulating and was only partially kept in order by repeated flushings. The superficial velocity of the water in the pipe was generally three, four and five times greater than the superficial velocity obtained under the same circumstances in the original sewer. On one occasion, the sewer in upper George street was carefully cleaned out immediately below the pipe, and a quantity of deposit, consisting of sand, pieces of brick, stones, mud, &c., was put in the head of the pipe. The consequence was, the whole of the matter passed clear through the pipe (560 feet long) and much of it was deposited in the bottom of the old sewer, at some distance from the end."

I could cite numerous instances from English reports where eight and nine inch glazed pipes have been used as main sewers, draining whole streets with thirty or forty houses and receiving both rain and sewage, which have given satisfaction. In Croyden, they went to the extreme of laying four and six inch glazed pipe for main sewers, but these were found too small, and by the advice of Mr. Wicksteed, eight and twelve inch pipes were substituted. I would, however, recommend that in Lowell (with very few exceptions) no main street sewers be laid of a bore smaller than twelve inches.

BRICK SEWERS.

For sizes greater than fifteen inches diameter, I would recommend that the sewers be built of hard burned brick (unless it be in quicksand, in which case it would be advisable to use pipe of greater diameter than fifteen

inches) generally, to be of one ring for all sizes under three feet, and of two rings or eight inches brickwork, if of three feet diameter or greater, up to the largest size to be used in Lowell. Form of section to be egg-shaped with the small end down, and for convenience and accuracy of laying and to give a more uniform bearing while the cement is green, the invert should be laid on narrow strips of boards, laid lengthwise, and carried a short distance up each side. As refuse boards may be used the cost of the work is not materially increased thereby; in fact I have found that a mason will lay the bricks enough faster to pay for the lumber.

In turning corners of streets the sewer should make an easy curve, and *not* a sharp, angular turn, and the inclination should be increased on the curve. Great care should be taken in packing gravel, sand, cinders and other suitable material under and at the sides of the invert, and to ram this well to a point above the spring line of the arch, which ought to be entirely covered before drawing the centres.

PIPE SEWERS.

One of the most important questions to be settled in the drainage of a city is the kind of pipes which should be used, as the length of pipe sewers will exceed that of brick.

GLAZED PIPE.

Experience has proved that hard burnt clay is so very durable underground as to be considered almost everlasting, examples being found of old Roman aqueducts and

sewers in perfect condition for present use, nearly two thousand years after construction ; these were of brick, but pottery (another kind of burnt clay) of every variety is found buried which belonged to periods far more ancient, and in excellent condition. There can be no question that if glazed pipe is made of sufficient strength to support the weight of earth upon it, that it is preferable to any other kind of pipe for sewers, the glazing, if put on properly, is a true glass, and will resist not only the slight acid of the sewage, but is not injured by even nitric or sulphuric acid, and the smooth surface given in this may accelerate the flow, as will be seen by the following :

“Experiments made by Mr Roe, at the suggestion of the Metropolitan Sanitary Commissions, to ascertain the comparative rate of flow through Glazed Pipes and Brick Sewers of the same size.”—*General Board of Health Report, London, 1855.*

TABLE OF COMPARATIVE TIME OF RUN OF WATER THROUGH
BRICK DRAINS AND GLAZED PIPE.

INCLINATION.	DEPTH OF WATER.	TIME THROUGH GLAZED PIPE.	TIME THROUGH BRICK DRAINS.
Level,	5	38	50
1½ inches in 50 feet,	3½	25	36
1¾ inches in 50 feet,	5½	19	27
2 inches in 50 feet,	4½	16½	25
2¼ inches in 50 feet,	3	18	26
2¾ inches in 50 feet,	6	13½	21½
3¼ inches in 50 feet,	4	15	22

The glazed pipe now mostly in use is better suited to the purpose than pottery pipe, and is in fact glazed fire-brick, less brittle than the stone ware and will admit of

being cut to suit required lengths of drains. Formerly the strength and durability of this pipe was questioned, because those first used for drainage were quite thin, frequently but half an inch thick for pipes of twelve inches in diameter and over, and of a light porous body, similar to drain tiles, and without glaze, called red earthen-ware pipes.

The pipe imported from Scotland and the north of England is a thick heavy pipe, made from fire clay, with a silicate glaze, is well suited to the purpose of a sewer, as it is not liable to fracture in the handling, and is strong enough to resist great pressure of earth. The manufacture of this kind of pipe is now carried on in many places in this country with a great degree of perfection, almost equalling the best Scotch. Careful tests were made in Brooklyn of the strength of various specimens of these pipes to resist crushing, and the enormous pressure which they withstood under the most unfavorable conditions, proved beyond a question their ability to withstand any weight of earth to which they may be subjected in ordinary sewer trenches, when the pipes are fair samples of our best manufactures. For details of these experiments, I refer to Mr. Adams' report on the general drainage of the City of Brooklyn.

CEMENT DRAIN PIPE.

A few years ago this pipe was in extensive use in many of our cities, but it is now being generally superceded by the more reliable and efficient pipes made of burnt clay and glazed, particularly in those cities that have had the largest and most extensive experience in sewerage

works. I find on enquiry that its use is being discontinued in Boston, New York, Chicago, Cincinnati and many other places; the principal argument in its favor seems to be a slight economy, those pipes of less than twelve inches in diameter costing less than glazed pipe; it is, however, doubtful if even the first cost is less, when we consider that it requires a larger diameter of cement pipe to do the same work as a glazed pipe, owing to its roughness, and consequent greater friction. The principal objections to its use are its want of uniform quality, being easily broken by handling, and its inability to withstand pressure in deep trenches; it is injured by frost, if exposed before the cement is thoroughly set, and in some localities the acid of the sewage renders it soft and friable.

INLETS AND BRANCHES.

While building a sewer, whether of brick or pipe, care should be taken to build in all pipe branches or house connections, which may be wanted, to avoid breaking open the sewer, and of these a record should be kept, and their position and size located on the sewer plans. All branches should enter with an easy curve, to discharge in the direction of the flow, as right angled junctions are more apt to cause deposits, and impede the flow in the sewers. These branches are to be capped when laid.

MANHOLES.

Manholes for inspection should be built on all sewers, at intervals of not over two hundred feet, and should be

more frequent on the small sewers and pipes where the inclination is slight than on large sewers or those with rapid fall. If the sewers are laid true to line and grade, and the manholes sufficiently near, there ought never to be occasion to dig up the streets, to discover obstructions or to cleanse them out, for, as this difficulty may generally be seen, by holding a lantern at one manhole, and sighting from another, it may be removed, either by flushing, by jointed rods, or by drag chains. The mode of operating the drag-chain is as follows: a float is sent down on the current, to which is attached a light string, and this in its turn carries a stouter cord, which is finally attached to a chain or drag; this will loosen the obstruction, which may then be removed by flushing. All manholes should be built of brick, of sufficient size for convenient entrance, and be provided with cast-iron covers, visible on the surface, to avoid the expense and annoyance caused by digging up the streets; there should also be a depression, or basin in the bottom, as a deposit for all matter too heavy to be carried by water. Plans for suitable manholes have already been laid before the committee.

CATCH BASINS.

These should be provided near the corners of streets, or at intervals of not more than three hundred feet apart, and required to be more frequent in level streets than on streets with rapid inclination. They should be of such magnitude as to contain about two yards of street dirt, below the end of the outlet pipe; should be trapped to prevent the sewer gases from offending the noses of pedestrians, and should have an opening, provided with a

cast-iron cover in the gutter, so that the dirt may be conveniently removed. The length of time that one of these should be left without cleaning, depends on the location. On some level, paved, and well swept streets, they may go a year or more ; but when located at the foot of steep side hill streets, which are unpaved, or uncared for, they may fill up in two storms ; the remedy in this latter case, is to pave the streets. But a force of men and carts should always be kept, whose duty it is to attend to cleaning these receptacles. At Boston, in 1863, it required fifteen men and five carts during the open season, and I find the average cost of cleaning the Cincinnati catch basins, which are larger than those I have recommended for Lowell, to be \$2.73 each. Accompanying this report, I hand you a plan of the catch basins which I propose for Lowell ; their cost will not vary much from \$100.

Previous to the year 1872, the only street entrances for rain water which had been built here, were mere gullies or sluices, all open to the wash of the street dirt directly into the sewers, with no arrangement to keep it from them. The cost of these was naturally less than that of the new street basins ; but the policy of such economy is at best very short-sighted, when it is considered that the probable end of this economy is to make it necessary to dig up the main sewer to clean it ; and the extra cost of catch basins may be expended at the first of such diggings. I quote from a Report on the Back Bay Drainage, Boston, 1863, p. 45 :

“ The only street sewers that have been opened to be cleaned out for several years, are those that were laid in streets not paved, and which were without any catch basins, having only gullies or sluices open to the street wash directly into them.”

VENTILATION.

The best method of ventilating sewers has been and still is a matter of discussion, and various plans are proposed in different cities for this object. It is not safe to leave the sewers without any proper means of ventilation, as, if by chance the sewage gets backed up in them, gases accumulate, and are forced into the streets and houses through the only available openings, the street gulley-holes and house drains. The leakage of gas-mains generally finds its way into the sewers, and this, besides being offensive, adds to the explosiveness of the sewer gas. The gasses of sewers are known to explode, and several cases of this occurred in Boston during the great fire, and have occurred elsewhere.

The simple method of leaving the street gulley untrapped, and with an open iron grating, has been and is still employed in Lowell as the only ventilation. The effect of it is, that the offensive gases are thrown out into the streets at the edge of the side-walk, and too near the front doors and windows of houses.

“It is often possible for a person walking in the street in the dark, or with the eyes covered, to tell when he approaches the *open* grating of a drain, by the offensive smell issuing from it.”—*Corfield*.

The best method that I can suggest for *economical* ventilation, and that giving the least annoyance, will be to perforate the iron man-hole covers in the centre of the streets, and to connect the rain-water pipes from the houses with the sewers, without traps, and this plan is the one now generally adopted. In many English cities they have built special ventilating pipes, carried to the chimney tops of the highest houses, objections being made

to the use of rain-water spouts, for the reason that during heavy rains, when the gases are trying to escape, the spouts are filled with the water from the roofs, and afford no passage for the gas. To aid the action of these special ventilating pipes, they have applied to them, in Liverpool, Archimedian screw pumps, which are kept constantly in motion by the wind. At the city just mentioned, there are about one thousand two hundred of these at work, and the number is being constantly increased. I quote from Corfield :

“Each of these ventilating shafts at Birkenhead is provided with a galvanized iron wire basket of a quarter inch mesh, ten inches square, filled with small wood charcoal for a width of six inches, fixed in a short horizontal gallery, between the openings through the crown of the sewer and the up-cast shaft, terminating at the surface of the street, in a position so as to protect the charcoal from being saturated with the rain-water falling through the surface cast-iron grating fixed on the top of the shaft level with the street.

“The manhole entrances are found to act as down-cast shafts, thereby facilitating the draught of gas through the charcoal filter fixed in the ventilating or up-cast shafts, very much as the principle of syphon ventilation.

“These ventilations are found to answer their purpose effectually, and very little, if any, trace of deleterious gas or unpleasant smell is perceptible at the gratings in the street,

“It is estimated that about 90 per cent. of sulphuretted hydrogen or other gaseous emanations from the sewer is intercepted in passing through the charcoal filter.”

FLUSHING SEWERS.

This term is technically applied to the cleansing of sewers by means of water dammed up behind gates, which being suddenly opened allow a rush of a large volume of water, which carries along with it substances that had been allowed to accumulate in the slight depth and ordinary daily flow of the sewerage alone. Many examples exist of perfectly level sewers, which depend upon flushing to keep them clean, some in London, in Ham-

burg and elsewhere in Europe ; but a remarkable example is to be found in Charleston, S. C., of a system of level sewers, adopted in 1858 ; the latter city being very flat and but slightly elevated above tide, the bottom of the main sewers are located but twenty inches above low tide. They have a line of main sewer two-and-five-eighths miles long, three feet six inches wide by four feet six inches high, with brick sides and semi-circular top arch, and plank bottom, having an outlet at each end, one of which, however, is used as an inlet. Each end is provided with a gate, opened or closed at will. Ordinary high tide gives a head of three feet eight inches at one end of this sewer.

In the report of the engineer it is stated that there is power enough in the current gained by storing the water until near low tide, to produce all the washing and scouring effect that is needed for removing sand, mud, and even brick-bats of as large size as are likely to find their way in. He further states that "the sewers cleared themselves not only of all such matters as form the mass of the accumulation necessarily gathering in sewers, but of the bars made by the workmen during the process of construction, and left by them, which bars were composed of brick-bats, sand and clay, and which were built purposely to resist the water and keep it from them while at work. Under the washing process, or flushing, these bars crumbled and melted, leaving nothing behind but the solid material, and even the brick-bats were found rolling out with the current at the mouth of the sewer." It was found after repeated observations made during spring tides, that the whole line of sewer could be filled from *one* end in just two hours, and emptied in the same length of time.

Mr. Chesborough remarks, in his general report on sewers, in 1858, that—

“If some substances, especially detritus of stone pavements, building materials and certain kinds of sand, are allowed to harden or pack closely in sewers, flushing will do but little or nothing towards removing them. There are other substances which will close up sewers beyond the power of ordinary flushing to remove. Among such are lime or cements from new buildings, and hot grease or pot-liquor, which cools or hardens in the sewer. These should never be allowed to enter.”

I quote again from Mr. Chesborough :

“The Romans appear to have understood this subject upwards of two thousand years ago, quite as well as the moderns do. They used the water of their aqueducts, not only for flushing out substances from the sewers, but for purifying the air in them, for they learned, by sad experience, that the neglect of this was followed by outbreaks of malignant fevers. They, too, like the moderns, found it necessary to remove substances by hand from the sewers, occasionally, notwithstanding the free use they made of water.”

We can judge from the above remarks, of the efficacy of flushing as a means of cleansing foul sewers. It is not necessary, generally, to build flushing-gates, but temporary wooden dams may be placed over the mouth of the sewer, at the manholes.

In the new system, there is but one sewer planned with an inclination slight enough to require regular flushing, which is that part of Dutton street between the Western canal and Market street, the grade of which is low enough to make use of the water from the canal. The slight inclination here given (one in 508) in a 15-inch pipe, for a distance of one thousand five hundred feet, is made necessary in order to utilize the good brick outlet sewer already built in Market street, and through Tilden street.

HOUSE DRAINS.

A system of sewerage may be tolerably perfect in itself, but if the house drainage is not properly carried out, it must fail to produce the good results which are expected of it. It is a very common thing to find houses whose owners have been assessed for public sewers in front of them, but which, nevertheless, remain without proper connection, because of the expense of putting it in.

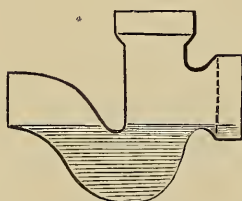
There are many streets in this city having good main sewers, and from which, notwithstanding, the worst odors of decayed vegetables, garbage and dish-water, rise to pollute the air, and which a casual observer would consider to be caused by the want of sewerage, but it is the simple result of throwing refuse into the gutters and cesspools, and of cellars without drainage, and is only a matter for police interference.

The street basins should not be made receptacles for house offal, nor should house drains ever be permitted to enter the street basins, gullies, sluices or cesspools, but only the sewer proper.

The house connections should be made after the following general plan. A circular glazed pipe, generally of six inches diameter, having a fall or inclination from the house to the sewer of not less than one in sixty, and unless the main sewer has a very rapid fall, the connection should be made with a curve discharging in the direction of the flow.

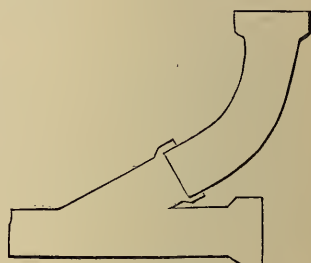
To avoid the introduction of gases into the house a syphon trap should be provided in the house branch, to sink below the level of the drain in such a manner that when filled with water, the passage of air is entirely obstructed. This trap should be placed outside of the

wall of the house, and over the middle of it should stand an open pipe extending to the surface. This upright pipe is to serve the following purposes: *First*, to admit of cleaning out the trap, and *second*, to prevent the syphon action of the pipe between the trap and the sewer, and it can be so placed that the vertical pipe over the trap shall receive the surface water from the front yard.



Syphon Trap.

It is important, also, that the soil pipe from the water closet should follow a course as nearly vertical as possible, and the bend which changes its direction from vertical to horizontal should be an easy curve, and not a sharp turn.



Branch Pipe.

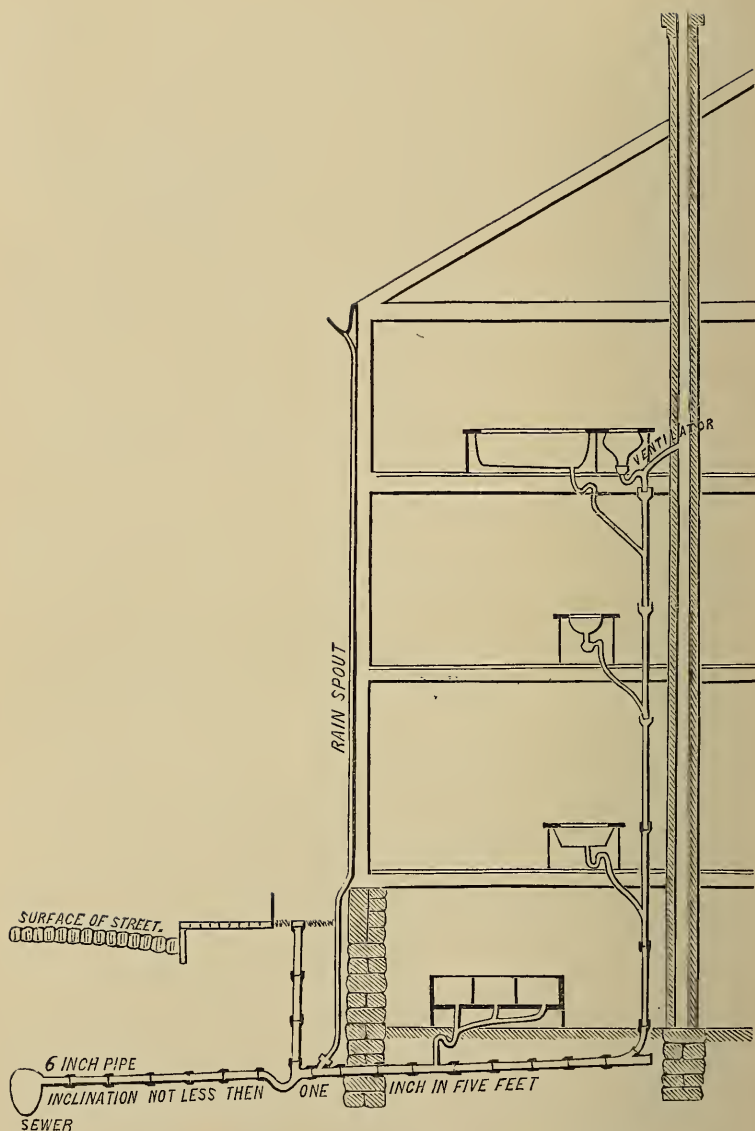
There should be but one connection between the house and the sewer, and this main, which is the water closet pipe, should receive all its tributaries from the sinks or bath tubs on its passage down. Great care should be taken to make all the connecting joints air-tight, but with the greatest care it is not always possible to accomplish this end, therefore a plan should be devised for carrying off the gases which may be inside of the house trap, and then the imperfect joints will cease to cause any annoyance.

The usual practice in plumbing houses, is as follows: First, the small lead drain pipes lead into a cast-iron soil pipe, and this in its turn enters the drain pipe leading to the sewer. They are connected by means of putty joints, and it is at these joints, generally, that the smell escapes.

It has been found, in practice, very difficult if not impossible to preserve the joints in these pipes air-tight, as the metal pipes alter their length with the temperature, and the expansion breaks the putty or cement joints. It is a very difficult matter to find a leak of this kind, as there is nothing visible to hunt for, as would be the case with gas or water pipes, therefore the remedy which I propose is to connect the upper end of the soil-pipe by means of a ventilator with the nearest chimney flue, or directly to the open air at the top of the house. An outlet is thus provided for the escape of all the gases from the house drains which will carry away the smell, but the workmen should, nevertheless, make the pipe joints as carefully as possible.

In the accompanying sketch, giving a section through a dwelling-house, I have endeavored to illustrate such a method for laying house drains, and their connection with the sewer, as will prevent the annoyances usually experienced, and hope it may be put in a form convenient for reference by those wanting information on this subject, for I have learned by observation, that there are very few, even among masons and plumbers, who understand it.

If the drains are without ventilation, the leakages in the pipes become outlets, through which the gases are drawn into the house, for the rarification of the air in a heated house causes a suction upon every aperture by which a supply may be admitted, and if these were in direct communication with the sewer, without the introduction of a trap, the sewer would become a supply pipe for furnishing mephitic gas to the houses, which would find its way into all heated rooms, and thence up the chimneys.



Section showing House-drainage and Ventilation of Drains.

DEPTH OF SEWERS.

The sewers are generally located on the profiles, so that the top shall be about two feet lower than the lowest cellars to be drained by them, where such cellars are not unreasonably low. In important main streets, where there is a probability that large buildings and deep cellars may soon be required, some regard has been paid to future necessities. It will not, however, be wise to look ahead too far, as the interest on the difference in cost of such additional depth might, in twenty years, pay for laying a new sewer.

CELLARS.

In our climate, the value of dry and well ventilated cellars is so thoroughly appreciated that they have come to be considered indispensable in all places, many people disregarding the fact that all localities do not admit of a cellar. If the ground is dry, or if it is sufficiently elevated to admit of being thoroughly drained, the cellar may be built, but if the location is in a natural depression of ground which does not admit of being drained without enormous expense, the grade of the street should be raised, and a limit fixed, below which no cellar should be allowed to be built. Many such localities exist in Lowell, where the street grades, for economical motives, were established too low for convenient drainage. There is low territory lying on both banks of the old Pawtucket canal, where, before many years, streets will be laid out, and when this is done the grade should be so established as to conform with the drainage which has been planned for this terri-

tory, and which can be seen by reference to the sewer maps herewith presented, and the cellars should not be built below the grade of the sewers there shown.

In London, cellars are not allowed to be constructed at such levels as will not enable them to be properly drained, and Mr. Rawlinson recommends in his report on the completion of the sewers of Carlisle, that "the board must not be responsible for cellar flooding in these low districts, and all parties so situated ought to have notice that any connection made by them with the sewers will be at their proper risk." Besides carrying out this suggestion with regard to old cellars, the digging of new ones in the low districts is forbidden by law.

In localities where the subsoil is naturally dry, or where it has a natural drainage through gravel or sand stratum, cellars may be built below the level of the sewers without inconvenience. Such is the case in most parts of Paris. "The cellars of that city are not connected with the public sewers at all, because they would be liable to flooding if they were, as many of them are below the level of the sewers." (Quoted from E. S. Chesborough's report of his visit to Europe in 1857.)

GOVERNMENT AND POLICE OF SEWERS.

Everything relating to the sewers should be under the charge of one competent and responsible head, their construction and the choice of material of which to build them, their location, the number and position of manholes and catch-basins, and method of constructing these; their inspection and cleaning, the method of entering by individuals, as well as the size and material of pipe used for

branch drains, and the rate of inclination given to these. The same person should keep the record of every sewer and drain laid, and locate its position on the recording plans, and also record the assessments upon the same sewer plans. If this method is followed there need never any annoyance arise from not knowing where the sewer is, nor from insufficient inclination, and many other blunders may be avoided which arise from the want of a definite head.

DESCRIPTION OF THE SEVERAL DRAINAGE AREAS.

Church Street Sewer.—The area to be drained by this sewer is about one hundred and twenty-five acres, and is included in the following boundaries, viz: Beginning at the intersection of Lawrence and Richmond streets, thence by Elm and Highland to Hale street crossing of the Boston and Lowell railroad, including the railroad cutting between Hale and Chelmsford streets; thence crossing Howard, Grand and Chelmsford streets, by the summit, and including the basin between Westford, Chelmsford and Smith streets; thence by Appleton and Church streets, to the Concord river, and back to the point of beginning, discharging into the Concord river, through the west abutment of the bridge at that point. This sewer was already built before the establishment of a system, as far as the junction of Summer and South streets; the area of its cross-section is equal to that of a circle $43\frac{7}{8}$ inches in diameter. The proper place for the discharge of it is *below* the dam on the Concord river, instead of *above*, as it is now. It would have been better to have continued it through George street and the Middlesex yard, to the point now proposed for the outlet of the Jackson street sewer, and thus avoid the formation of sewer deposits in that mill pond. This may yet have to be done for the health of the city.

Jackson Street Sewer.—The area to be drained by this sewer is two hundred and six acres, and is a long narrow strip, extending from Concord river to the Chelmsford line at Westford street, and embraced between the Pawtucket canal, Walker street, and the dividing ridge just south of Westford street, including a strip about eight hundred feet wide on Westford, west of Pine street junction, and thence bounded by the last named area at Appleton and Church streets, and discharging into the Concord river, through the Middlesex Company's yard, in the line occupied by a former city sewer. The size of this sewer will be equal to the area of a circle forty-two inches in diameter.

Taylor Street Sewer.—A small area of about fourteen acres, has a separate outlet into Concord river through Taylor street, and has the following boundaries; Commencing at the junction of Taylor and Lawrence, and thence northly through Lawrence and Mill streets, draining the houses on both sides; thence south through Central to Hudson, and including Chase and Swift streets, returns by Merrill street to Taylor street. This sewer was built in 1872, and its size is equal to a circle two feet in diameter.

River Meadow Brook.—All the area of Wards Three and Four lying south of the territories above described, and included within the limits of our surveys in that direction, being about one thousand acres, and which is the natural valley of this brook, will drain into it for the present, but in view of the increase of population in this territory, and the time when there may be a sufficient quantity of sewage to pollute the stream, I have made provision for an intercepting sewer to be built from the foot of Lincoln street to the foot of Cambridge street, near the brook, and thence crossing it and under the two railroad banks, and following a natural depression to a point near the Gorham street bridge, thence crossing the brook again and through Chambers street, and by the north bank of the brook to the Concord river, its total length would be about five thousand four hundred feet. This is the largest main sewer contemplated in the system, being a circle of seventy-two inches in diameter, but it will probably be many years before the growth of the population will be sufficient to make it necessary, and, until such time, all sewers will drain into the brook at the nearest point, their outfalls being at such an elevation as to fall into the intercepting sewer. No estimate of its cost is presented.

West Slope of Wards Four and Five.—Middlesex street, Broadway, Walker and Pawtucket street sewers are the principal outlets for draining a territory of one hundred and fifty-five acres lying west of Walker and north of Proud street, and drain into the Merrimack river above Pawtucket Falls at two separate outfalls; one near the intersection of Broadway and Pawtucket streets, and the other through the yard of Johnson's Felting mill, near the intersection of Walker and Pawtucket streets.

Margins of Pawtucket Canal North of Broadway.—A strip of about ten acres on the west side and another of about eighteen acres on the east

side will also drain into the Merrimack river above the falls. The territories last described, and amounting to one hundred and eighty-five acres, draining into the Merrimack above the falls, may, by an intercepting sewer, be made to discharge below Pawtucket Bridge, but at a very heavy expense, and I have therefore not thought it necessary even to contemplate it as a future necessity. I mentioned in my report to the committee in December, 1872, that as the city water is taken from the opposite, or Dracut shore, and below the one hundred and twenty-five acre outfall, it might be thought by some, objectionable to discharge here, but as the drift of the current is away from the Dracut shore, and the amount of sewage will be very small from this partly agricultural area, I do not see any reasonable grounds for objection.

Suffolk Street Main Sewer.—Draining an area of about two hundred and fifty acres, and having two branches which unite at the intersection of Moody and Cabot streets, and thence crossing under the Northern canal by a thirty-six inch cast-iron pipe, discharges into the Merrimack river, just above the Lawrence mills. The larger of these two branches draining the southern slope of Ward Five, between the Pawtucket canal and the Western canal, or about one hundred and fifty acres, will have a cross-section equal in area to a circle of forty-two inches diameter, and will extend from the intersection of Western Avenue and Fletcher street through Fletcher street, Liberty Square, Suffolk, Moody, Cabot, Perkins, and thence to the river, a total distance of five thousand five hundred and seventy-eight feet, and will receive the drainage of Western Avenue, School street, and all the southern slope of that hill. The other branch commences on Pawtucket street, just west of School, and extends through Pawtucket, Salem and Cabot to the intersection of Moody; will have a diameter of thirty inches in Salem street, and will drain about seventy-eight acres. There are two old sewers following natural water courses from Salem across Merrimack and Moody streets, which, together with the drainage of Ford street, cross under the Northern canal, by a twenty-four inch iron pipe, at a point three hundred and forty-two feet east from James street; they join before crossing Moody, but as the continued sewer is only large enough to drain six acres of territory I make use of it only for the drainage of a part of Moody street, and the remaining areas now very badly drained by it, will be taken into the new sewers contemplated for Salem and Merrimack streets.

Ward One.—Sixty-six acres of territory has a good main sewer

through Tilden street, emptying into the river, which is sufficiently large for the whole ward.

Ward Two.—Forty-four acres of which is to be drained by the city, (the balance being drained by the corporations,) has a good outlet into the Concord river from Prescott street and under the Prescott mills, but there is wanting a main sewer in Prescott street.

Ward Two, Centralville—is provided with a good main sewer in Bridge street, draining all that slope of the hill included between Bridge street, Beacon street, Eleventh street and the river, an area of one hundred and two acres, and is of ample size for this territory. The rest of this ward, being an area of three hundred and eighty-four acres, will drain directly into the Merrimack, through several distinct outfall sewers, as shown by the general map accompanying this report, but is as yet entirely without sewers. The brook that now receives the drainage of all that part of Centralville (as well as a portion of the town of Dracut) lying west of Bridge street, which, after meandering nearly parallel with the river, empties into it just above Central Bridge, is becoming year by year more polluted, and may in the future cause sickness, if not remedied. To avoid this very probable result, the present scheme of drainage contemplates a new outlet for it above West street, making it do duty as a main sewer above that point. When this sewer is built the old channel should be filled up, and Coburn, River and other streets below West street must find direct outlets into the river.

Ward Six, Belvidere.—Three separate areas will drain into the Concord river, and three also into the Merrimack, and are as follows: Ninety-one acres of the southern end of the ward, including the cemetery, is as yet without streets, but will find easy drainage directly into the Concord river. Fort Hill is in this section. Sixty-seven acres bounded by the last named area, Nesmith street and a line south of and parallel with Oak street and by the river, it having but one street laid out (High street), will also find direct drainage into the river. This will receive a large water-shed from the north slope of Fort Hill, and has a natural water course running through it to the river. Twenty-five acres will drain out through Andover street into the Concord river, and is already provided with a brick sewer of sufficient size, but not deep enough. Thirty-five acres of the north-west corner of this ward will drain into the Merrimack, at the mouth of the Concord river, but is not as yet provided with a suitable outfall. This will have to be built in

East Merrimack street, emptying under the bridge across Concord river. The largest main sewer for Belvidere will have to be built through Nesmith and Alder streets into the Merrimack; it will drain about sixty-three acres of city territory and twelve acres of the town of Tewksbury, in all seventy-five acres. The total length of this sewer will be four thousand feet, and its maximum size in Alder street equal to a circle of twenty-six inches in diameter. About fifty acres of the north-east corner of this ward, having at present very few houses, will find direct and easy drainage into the Merrimack, through East Merrimack and Stackpole streets.

The total area to be drained by the contemplated system of sewers is about twenty-four hundred acres, or nearly four square miles.

The aggregate length of available sewers already built is thirteen and four-tenths miles. The total length required to be built to complete the whole system will be thirty-seven and nine-tenths miles, as is shown more in detail in the following table :

	LENGTHS OF SEWERS BUILT UP TO 1873, INCLUSIVE.	LENGTHS OF SEWERS THAT WILL SOON BE REQUIRED.	TOTAL LENGTHS TO BE BUILT IN THE WHOLE SYSTEM.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
Ward 1.....	9,725	3,950	3,950
Ward 2.....	7,385	4,200	4,200
Ward 3.....	10,820	24,620	28,400
Ward 4.....	9,170	40,000	65,000
Ward 5.....	9,170	45,170	51,380
Centralville.....	6,230	21,120	42,510
Belvidere.....	8,315	15,095	15,095
Total feet.....	60,815	154,155	210,535
Total miles.....	13.40	27.3	37.9

One valuable result of our labors, that will soon be ready, is an entire map of the city on a scale of fifty feet to an inch, divided into sixty sectional sheets, each forty by twenty-six inches, mounted on cloth, ready for binding, each one numbered with reference to an accompanying index map, so that all detail of sewers may be found with but a moment's delay.

CONCLUSION.

It is generally considered that the fewer the number of main sewers the cheaper will be the total cost of draining a city, but the peculiar topography of Lowell, already referred to, and the fact that there were already built several miles of sewers, including four main outlets which it was desirable to utilize, made it necessary to increase the number of drainage districts. The possibility of building one main sewer through the bottom of the old Pawtucket canal, to do the work of three mains adopted in this scheme, was carefully considered, surveys and estimates made and the results laid before the committee of last year, and, in the report then made, it was shown to be cheaper to build the three sewers which are located in Suffolk street, Jackson street and the southerly margin of the old canal.

Any scheme for the drainage of the city, to be productive of good results, depends as much (or perhaps more) upon the intelligent and careful construction of the sewers and their appurtenances, as upon the proper adjustment of their sizes and directions of flow, and, unless all the details here recommended are carefully executed and observed, the sewers and catch basins kept clean from

street washings (particularly in unpaved streets of steep inclination) I should not expect to be censured if the sewers failed in their action.

I must here acknowledge valuable assistance received from Messrs. Charles J. Smaller and C. H. M. Blake, by whom, under my direction, most of the instrumental work of these surveys has been done.

Thanking the committee for their uniform courtesy, this report is respectfully submitted.

DAVID W. CUNNINGHAM.

ESTIMATES OF COST OF SEWERS IN ACCEPTED STREETS.

STREETS.	LENGTH IN FEET.	COST.	STREETS.	LENGTH IN FEET.	COST.
Ames,	317	\$1367	Carlton,	170	\$707
Adams,	478	1612	Common,	1070	3337
Anne,	902	2107	Coburn,	2484	8878
Auburn,	303	920	Chelmsford,	2004	8266
Austin,	425	2228	Cabot,	475	3482
Arlington,	652	2572	Durant,	1260	2571
Andover,	810	2472	Davidson,	883	3256
Appleton,	406	2604	Dutton,	1773	8234
Bartlett,	145	453	Dane,	412	1359
Branch,	1430	8507	Elm,	577	1790
Bridge,	1245	4932	Everett,	215	625
Beacon,	2525	6769	Eleventh,	475	1029
Broadway,	5301	19468	Fletcher,	3268	17216
Butterfield,	985	4681	Fairmount,	1170	4388
Beach,	609	1551	Franklin,	585	1792
Centre,	190	430	First,	1490	4265
Chapel,	324	656	Ford,	760	10428
Central,	521	1579	Fayette,	1227	4185
Church,	398	1822	Fifth,	370	1003
Cross,	1288	5750	Grand,	62	466
Cedar,	584	1829	Gorham,	2061	8505
Cushing,	942	2863	Gates,	732	5471
Chestnut,	760	2411	Grove,	270	768
Clark,	890	2756	George,	90	315
Coral,	685	2134	Green,	490	1258

ESTIMATES OF COST OF SEWERS, (CONTINUED.)

STREETS.	LENGTH IN FEET.	COST.	STREETS.	LENGTH IN FEET.	COST.
Harrison,	700	\$1912	East Merrimack,	2163	\$7075
Hanover,	180	711	Mt. Vernon,	2312	11031
Hampshire,	216	565	Middlesex,	8082	41348
High,	3671	13570	Moore,	2400	8299
Hale,	1490	4061	Myrtle,	1275	4102
Howard,	573	1550	Marshall,	570	2845
John,	320	1749	Mansur,	380	1026
John Street Avenue,	397	847	Mt. Washington,	1499	5722
Jackson,	3734	40850	Nesmith,	3954	15481
James,	216	966	Nichols,	400	1556
Jewett,	1000	2497	Park,	393	1125
Kirk,	211	984	East Pine,	400	1121
Lawrence,	1330	3883	Prescott,	260	1842
Lee,	103	590	Pond,	690	2193
Lagrange,	290	1209	Paige,	798	4623
Loring,	825	2312	Pawtucket,	3490	18249
Lane,	970	2765	Queen,	280	1386
Liberty,	2858	13087	Rock,	1779	9765
Lewis,	805	2086	River,	3276	10873
Little,	175	627	Rolfe,	955	3135
Lincoln,	4085	10807	Railroad,	710	2714
Livermore,	200	698	Read,	310	1051
Mill,	304	1589	Salem,	1715	11930
Moody,	1050	3180	Stackpole,	2920	7165
Merrimack,	2163	11031	Second,	485	1247

ESTIMATES OF COST OF SEWERS, (CONTINUED.)

STREETS.	LENGTH IN FEET.	COST.	STREETS.	LENGTH IN FEET.	COST.
Seventh,	155	\$657	Varney,	1009	\$5728
Smith,	2305	13797	Vernon,	525	1394
Sixth,	1530	4994	Varnum,	810	1931
School,	4485	20985	Wanalancit,	943	5878
Summer,	1058	3817	Western Avenue,	2257	9588
South,	941	4772	Willie,	1000	3332
Suffolk,	4097	84556	Westford,	5800	45182
West Sixth,	770	2216	Worthen,	1075	3585
Third,	1039	3491	Wilder,	6450	11256
Tenth,	2525	7996	Walker,	3970	12826
Thorndike,	1387	5028	Whiting,	455	2533
Union,	295	891	Willow,	725	2237
West Union,	365	838			
Total cost in accepted streets,.....					\$831,419

ESTIMATES OF COST OF SEWERS IN UNACCEPTED STREETS.

STREETS.	LENGTH IN FEET.	COST.	STREETS.	LENGTH IN FEET.	COST.
Agawam,	1280	\$3765	Gates,	750	\$3736
Andrews,	1455	5023	Hampshire,	804	2109
Abbott,	550	1675	Hollis,	876	2012
Bartlett,	405	1344	South Highland,	351	795
Bowers,	681	3641	Hildreth,	1670	6119
Brown,	250	926	Kidder,	473	1464
Chelmsford,	800	2440	Keene,	555	2447
Cottage,	248	670	Kemp,	495	1998
Congress,	1170	3045	Lyons,	265	992
Cambridge,	1245	3972	McIntire,	245	894
Carter,	380	1177	Methuen,	1920	4902
Dover,	1205	3111	Newhall,	550	1837
Eighth,	350	1147	Oliver,	368	1016
Floyd,	492	1527	Pawtucket canal, (Marginal sewer.)	4955	29027
Ford,	350	1845	Pine,	2493	7764
West Fourth,	805	1892	Powell,	1900	7828
West Fifth,	685	1653	Swift,	420	1279
Gold,	343	1444	Whipple,	1012	3160
Grand,	1336	7392	Wyman,	1030	3239
Total cost in unaccepted streets,.....					\$60,449
Total cost in accepted streets,.....					\$761,093
“ “ “ unaccepted streets,.....					130,775
“ “ sewers built in 1872-3,.....					77,620
Engineering thus far,.....					\$12,500
Engineering to finish,.....					13,500
					26,000
Total cost of system,.....					\$995,488

PLAN OF THE CITY OF LOWELL SEWERAGE SYSTEM

EXPLANATION

Figures marked "I" indicate Diameters of Pipe Sewers in inches
Figures "B" " " " " Brick
Boundaries of drainage districts marked thus

SCALE 1000 FT. = 1 INCH

DRAWN BY

CHAS. J. SMALLER, ASST. ENG.
LOWELL SEWERAGE



